sputnik

MONTHLY DIGEST

April. 1968

3/-

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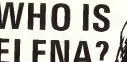

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LETTERS TO THE EDITOR

Please address your letters to
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2, Pushkin Square, Moscow,
USSR

Suggestions

I was slightly disappointed to find no poetry in your December issue. Poetry is my first love and I would like to know more about Russian poetry and poets.

C. Henderson, Fife, Scotland

I would welcome an article in your magazine on the terrible maimer in our society, schizophrenia, and how it is treated in your society. Is anything done in the Soviet Union about possible very early detection and prevention of this illness?

Jean Symons, Preston, South Devon, England.

It would be of the greatest interest to your English readers to learn about labour relations in the USSR and how these are dealt with.

Dr. J. H. B. Beal, Great Britain

*We shall do our best to carry out your suggestions in future issues.

Comments

I was astounded to read in the December issue the letter written by P. F. Cutrera, Lincolnwood, Ill., USA. As SPUTNIK is a Soviet magazine it does, of course, state Soviet achievements.

Sheila A. Roberts, Thornton Heath, Surrey, England

I am surprised you included P. F. Cutrera's comments in the December issue. Mr. Cutrera and those who think like him must face the realities of life. I get the impression he is either ignorant or simply pulling your leg.

Ronald J. Ellis, Weston-super-Mare, Somerset, England

SPUTNIK is one of the most interesting magazines I have ever read. It brings about every facet of Soviet life into concise reading form.

Albert S. Green, New Canaan, Conn., USA

Kindly accept my compliments on the beautiful illustrations and the photography that accompany each copy of SPUTNIK.

Faruque M. M. Huq, Chittagong, East Pakistan

SPUTNIK has certainly given me a taste of your country, and I feel now I should like to visit it and see for myself. I am becoming more curious regarding life for the housewife in Russia.

J. Houston, Troon, Ayrshire, Scotland

Continued on Page 7

Featuring colour pictures — medicine, science, spece travel — fiction — memoirs — the arts — sport — hobbies — fashions — cuisine — humour.

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LETTERS *continued*

Tourists' Views

I would suggest a few articles on areas of Russia which are popular with tourists, as I hope to travel to Russia next year and yet I do not know which areas I would most like to see.

Alao D. Booker, Salford, Laocashire, England

I have been to Moscow twice and admire the city. Please write more about Moscow, its people, about pressing problems of today, and about art. It is art that unites peoples irrespective of the political problems of our time.

Roswitha Weber, Wuppertal-Elberfeld, West Germaoy

The truth about Russia cannot be imagined. Russia must be seen to be believed. Nevertheless, what I have to tell you is the ordinary unembellished truth—these people do not view life through rose-tinted glasses. The people of Russia captured our hearts: quiet spoken, gentle, humble people, entirely lacking in self-assertion, they did everything for us and expected nothing in return. Russia will tolerate no interference. Leningrad never fell. Her victory has been hard won, and she will not let it go.

H. J. McNamara, Bouroemouth, Hants, Eogland

Pen-Friends Wanted

I am keen to have pen-friends in Europe. I am 21 years old and a cook. I like travelling, and speak English and German. I'm learning Polish.

Isobel A. Hart (Miss), 15 Ambec St., Haxley Rd., York, Yorkshire, England

I would like pen-friends in as many countries as possible. I am 23 and training to be a lawyer. My interests are varied, but include photography, art, theatre, sport and philately.

Kenneth W. Wood, 87, Cliff Gardens, Scunthorpe, Lincolnshire, England

I would like very much to have friends all over the world. I am a French student nurse in London, 20 years old, general interests, write French, English, Spanish.

Françoise Melvi, Western Hospital, Seagrave Road, London, S.W.6, England

I am an English nurse and I would like to have pen-pals.

Pamela A. Mooks, 198, North St., Ashton Gate, Bristol 3, England

With your help I should like to have pen-friends in all parts of the world. I am 19. I know Russian and English. My main interests are literature, films, radio and travel.

Ryszard Araśoiewicz, ul. Ludwika Waryńskiego 51/14, Bydgoszcz, Poland

As SPUTNIK is read in many countries, will you please let your readers know of our wish to correspond with schools in other countries whose pupils are studying Russian. Our address is: Woodworking Technical School, Zvolen, Czechoslovakia.

ODESSA HUMOUR

In the south of the Ukraine, on the shores of the Black Sea stands Odessa, one of the most beautiful cities in the Soviet Union. The people there are quick-witted and have a unique sense of humour. Here are some examples, presented by Lyudmila Davidovich.

"Odessa from the sea looks like paradise,
But from the shore it looks the same!"

* * *

Instruction on the door of an Odessa flat: "Ring four times and shout—SONYAAA . . .!"

* * *

"She says she's 35."
"Centigrade. She subtracted 32 from Farenheit."

* * *

In the market a woman comes up to a stall where sprats are artistically arranged in neat rows. She sniffs and asks: "How much for the whole corps de ballet?"

* * *

Old man: "Do you have any white loaves?"
Baker: "No."
Old Man: "When do they expect to be in?"

* * *

"How do I get to Pushkin Street?"
"First to the left and straight ahead. It'll come across you pretty soon."

FIRST LICENCE PLATE

from the newspaper Trud

Rudolf Herzog, an elderly Berlin merchant, placed his beloved wife's intials on his car in 1901. The plate said "JAI"—the JA for Johanna Akker. He gave no thought to licence numbers or traffic rules, and didn't dream that he was founding a universal licence plate system.

HEIGHT: about 180 feet
WEIGHT: 14,500 tons
AGE: around 800 years
DISTINGUISHING MARKS: off balance

On March 10, 1964, the government of Italy sent out an SOS. All scientists and architects of the world were asked to help to save the leaning tower of Pisa.

People have been waiting for the tower to topple for nearly eight centuries. It owes its fame to an error made by Bonannus, the architect, in 1173-1174—he planned the erection of this white marble tower in Miracles Square without paying attention to soil stability. When the third tier was finished, the tower tilted, so work stopped. Bonannus paid a heavy price for his mistake. The angry Pisans banished him from their city and he died in poverty and loneliness.

For nearly a century nobody dared touch the leaning structure. Finally, Giovanni di Simone, a bold and original architect, at his own risk added another four tiers. When all he had left to do was to crown the structure with a bell-tower, the architect thought the tilt too dangerous. To avoid the fate of his predecessor, he refused to carry on the work. Some 60 years later the unique structure was completed by architect Tommaso Pisano.

In 1350 Miracles Square lived up to its name: the tower welcomed citizens with a slight bow. The entire world now knows it as the leaning tower of Pisa.

When construction was completed, the top of the tower deviated from the true by over four and a half feet. That was what made the tower of Pisa a "celebrity" and its city a goal for tourists. Everyone is eager to see the 180-foot "falling" structure, to have their pictures snapped against it and risk mounting its steps. Incidentally, the tower is noted for another reason. Legend has it that Galileo dropped a one-pound shot and a ten-pound shot from the top of the tower to establish the Law of Falling Bodies.

When Will the Tower Collapse?

Since 1911, a Pisa University professor has been measuring the tower's tilt at 5 a.m. on June 19 each year. The 1964 reading was disturbing: the top deviated from the perpendicular by well over 16 feet. A group of experts who examined the bell-tower confirmed the worst: each extra millimetre of deviation threatens to become fatal as ground waters annually wash away half a pound of hard particles from under the tower's foundations and cause it to lean more and more.

How long will it stand?

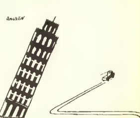
As one scientist said, it may either survive for another 200 years or, if its gravity centre shifts, collapse any day. However, this possibility only heightens the curiosity of tourists,

Rostislav Elagin, a Soviet architect, fancies geese as the answer to the Pisa problem.

who want to see and touch the walls of that masterpiece of medieval architecture and climb as high as the belfry.

In 1964 climbing the tower was prohibited, and it was forbidden even to approach it, to ensure compliance with the order the beauty of Pisa was fenced in with barbed wire. No exception was made for anyone. Bell-ringer Ennio Ghilardi of the tower staff made his last climb to the bell-tower that same year, and has been replaced by an electrical device which rings the bell with practically no vibration.

Architects and builders have made provision in case the structure topples. Motor traffic has been



banned from the vicinity of the tower and 100 automatic still and movie cameras have been installed to film the fall.

But the Italians, not to speak of the Pisans, hate tbe thought of having their pride come tumbling down. The tower is an asset to tbe city and brings in considerable income. Pisa averages annually three million tourists, most of whom come to see the tower.

Emigration, Electrodes or Boomerangs?

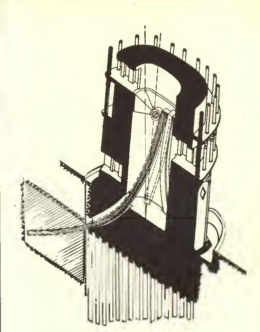
In response to the Italian government's appeal in 1964, there came a rain of suggestions. It was not the first time that experts from different countries had sought a solution to the prohlem. Before that year, some 1,300 proposals had been sent to Pisa but all of them were rejected.

Many have said that only straightening it out would save the tower. But the Italians were indignant: straightened out, the tower would lose its appeal and perhaps the capricious tourists would no longer travel to see it. Even its collapse would be preferahle—the tourists would come to view the ruins.

An Italian, Professor Gustavo Colonnetti, made another suggestion. He estimated that 15 giant lifting-screws with a hoisting capacity of 1,000 tons each could raise the tower by several millimetres. That would make it possible to broaden the foundation. The Fiat Company estimated that the job would cost some 15 million dollars.

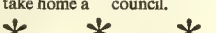
Professor Romuald Cebertowicz of Poland suggested that the tower be surrounded by horseshoe-shaped tubular electrodes charged with higb-voltage current. The tubes would be filled with a special liquid which the current would cause to react with the ground. After about 40 days the soil under the tower would petrify: 53,600,000 cubic feet of earth would thus be cemented to form a new foundation which would extend the old one and and reach to a depth of 23 feet. That would provide extra support for the tower and prevent it from leaning further.

Soviet experts also responded to the appeal. The Soviet-Italian Friendship Society formed a committee under Mikhail Tupolev, an architect. The most interesting of the 200 projects which have already been submitted belongs to engineer David Malkov. He suggests drilling boles in the tower foundations and inserting three giant boomerang-shaped steel beams. Passing through the holes (below the level of the Square and unseen from the outside) the beams would meet inside the tower at a beight of some 53 feet from ground level—right at the bell-tower's gravity centre. The whole system would resemble a bent tripod, rigidly linked witb a metal ring mounted in the tower walls which would keep the entire structure in its present position. The requirements have been observed: outwardly the tower will look as it does today—"falling"—yet it will never fall. The bases of the tripod would rest on three underground foundations, about 50 feet from the tower.



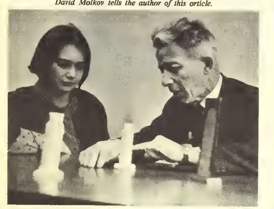
Boomerang-shaped steel beams will save the leaning tower believes David Malkov, another Soviet architect.

Malkov does not think that costs will present any problem, for he suggests selling the 1,500 cubic feet of stones which must be removed during the work. Having lain underground for nearly eight centuries, these stones need no advertising. Any tourist would be happy to take home a piece of the leaning tower of Pisa. If the Italians sold a square inch cake of foundation at a dollar apiece, the resulting profit would cover the approximate cost, two million dollars, of the project and leave as much again and more for the Pisa municipal council.



More suggestions are coming in. Thousands of experts are attacking the problem of how to save the tower of Pisa. A national competition beld in Italy in 1967 brought no positive results: the board turned down every entry. Later this year foreign proposals will be considered. A panel of judges will then decide who is to be given the honour of saving the Italian beauty.

"I sholl be delighted if the Itolions like my ideo," *David Molkov tells the author of this orticle.*



BLOWTORCH FOR BRUSH

from the magazine Izobretatel i Ratsionalizator *(Inventor and Innovator)*

—How can you decorate a dull-gray concrete slab?
—Paint it?
—All right. But paint wears off too quickly.
—Use tiles?
—Fine. But not half as cheap as

PAINTING WITH A FLAME.

Concrete has the many man-made minerals contained in cement, and a wide range of natural admixtures. Each mineral has its own chemical structure and colour. Treated with heat the minerals melt, and as they cool off, they change colour. In concrete, mineral substances melt at 3,270-3,630° Fahrenheit, and the surface becomes covered with a thin glass-like layer. This happens not only to concrete but also to silicate, plaster and all sorts of solutions based on inorganic binding materials mixed with natural mineral matter.

It is interesting to watch Mr. Nikolai Korsak, who devised the flame-painting method, demonstrate his invention. He takes a blowtorcb, adjusts the flame, and begins playing it on the surface of a concrete slab. In a minute or two the drab grey surface becomes a bright green sprinkled with white spots—like a field of daisies. He readjusts the flame and trains it on a new slab. Soon it becomes bright-yellow with dark-brown spots—just like a freshly baked fruit cake. He feeds more acetylene to tbe flame and the concrete surface turns ebony black.

"It's the ratio of oxygen and acetylene in the flame that does the trick", he explains. "Feed the burner with a mixture in which there is slightly more oxygen than acetylene, and a concrete surface will go white, light-blue, or green dotted with white. Add still more oxygen and your material will become yellow. If the ratio is balf-and-half you'll get a dark-brown colour."

The glass-like layer is not affected by sun, rain, snow or frost. After alternately freezing and heating it 150 times experimenters found that the layer not only did not flake off, but stuck to the material three times as fast.

The Way We See It

Notes for a Guidebook

by Daniil GRANIN

Fifty-year-old Daniil Granin, son of a forester, trained as an electrical engineer but works as a writer.

Granin has made several trips to other countries, including one to Britain.

His articles about his travels are very popular with Soviet readers.

London Consists of Quotations

I waited just at the bend in the riding track. A minute passed without anything happening. I was surprised, for I knew *what* was supposed to happen here each morning. I was even working up a temper. Just then a tardy rider flew out from among the trees. He rode towards me, trying to look as though nothing were wrong. I shook my head in dissatisfaction, but I felt reassured, all the same: it was as all the guidebooks said—in the mornings people went out horse-riding in Hyde Park.

Everything seemed to be in place, Marble Arch, the plump thrushes, and the slender swans on the lakes. I strolled about like a bailiff taking an inventory. I was seized with melancholy. I could no longer understand why on earth I had come here. To make sure that everything was where it should be? I believe it was the first time I had no taste for travel.

Once upon a time I had avidly read all the travel articles I could about Britain. I had read them at various times, but now they were all indistinguishably fused in my mind. Each was the twin of the next. The authors had probably not read one another's work, yet each one meticulously repeated the identical collection of impressions. Over a hundred years or so a compulsory enumeration had been evolved for the benefit of anyone writing about Britain.

So not one of my sensations was my own private one. Any one of them had already been described. London consisted of quotations. Cathedrals, lunch, parks, clerks, the City, open fireplaces—they were all in quotation marks. From one set of inverted commas I stumbled into the next. I was doomed to plagiarism, for any more or less conscientious description of London includes the following:

1. Fog, smog, sooty walls, houses etched black and white, traffic on the left-hand side of the road, double-decker buses, great streams of cars, long streets of identical houses painted different colours, and the unpleasant Underground.

2. The Changing of the Guard at Buckingham Palace. The Guards in their scarlet tunics and tall, shaggy bats. The band playing, the drums beating, commands being barked out, crowds of tourists clinging to the Queen Victoria memorial, others squeezing heads and cameras through the railings to get a good look at the daily performance.

3. Speakers' Corner in Hyde Park. Large and small crowds of people witb nothing better to do gathered around hoarse, shouting, political speakers and preachers.

4. Museums. The British Museum, the National Gallery, Madame Tussauds. Wonderful pictures, bad displays, too many museums, the number of exhibits making your head whirl. A description of Leonardo's Madonna is essential, plus a Turner, and two or three other selected painters. And you must poke fun at the waxworks.

5. Ravens at the Tower. They tell you legends about them, and a chronicle of sinister events.

6. Britisb traditions. Fireplaces, the Woolsack on which the Lord Chancellor sits in the House of Lords, the pubs, the Christmas turkey, London stockbrokers witb bowler bats and black umbrellas, the little restaurant where Sherlock Holmes was supposed to go.

7. Westminster Abbey. The City, the neon signs in Piccadilly Circus, suspicious-looking cafes in Soho, aristocratic streets in the West End, contrasts.

8. Meetings with Londoners. Here you need not tax your imagination too much, eitber. Any meeting, whether it was so or not, is presented as evidence that the English are not in the least cold and stand-offish, that they have a sense of humour, that they even laugh, in fact that they are not at all like the traditional picture of the silent reserved Englishman. It is curious how insistently every book assures us that Englishmen are not in the least like Englishmen. It has never been explained who first drew that traditional portrait of an Englishman which the Englishman does not resemble in the slightest.

These eight points are a compulsory minimum in any article about London. There are similar statutory selections for Edinburgh, Stratford, and other places. Tourists are not expected to have any additional experiences.

Deviation from the Tourist Norm

We drove a bit, stopped, got out, got in again. The guide's voice came over the microphone. Streets, shop-windows, and places of historical interest glided past. It was a wonderfully produced wide-screen colour film. Three-dimensional, stereophonic, done in the latest documentary style—the stream of life.

Then we had lunch, drove around again, trudged through museums, had supper and went out walking. Tbe Tower was like its photographs, the pictures were as they were in the monographs. There was Captain Scott's "Discovery" in the Thames, and then Waterloo Bridge and the Houses of Parliament. Big Ben was right where it should be. The Prime Minister's residence was still at No. 10 Downing Street. London was built in strict accordance with the guidebooks, travel articles and films.

The life began to suit me. At any rate it was congenial. In the evenings we returned to our hotel rooms and watched television. We saw films about murders and motor races, followed by shampoo advertisements, then more gun-play. At midnight it closed down and we went to bed.

The days went by precisely according to schedule, easily and serenely, leaving no feeling of disenchantment, no feeling of waste, nothing, in fact. And if it had not been for the incident in Westminster Abbey. . . .

Strictly speaking it can hardly be called an incident, or an event. I was trailing after the guide with the rest, gazing at the stained glass windows, tbe crucifixes, the monuments to eminent churchmen and generals. Then something—you know how it is—made me look down, and beneath my feet I saw a small inscription, half erased by thousands of feet, saying: "Micbael Faraday".

I pulled up suddenly and stood stock-still, at first without thought or feeling. Then something quivered within me and then I came to.

Michael Faraday was one of the heroes of my childhood. I had read a book about bow he had been apprenticed to a bookbinder as a boy, and had sat at night poring over the tattered volumes brought in for rebinding. He bad found life hard to begin with, and it seemed to me that anyone could have that kind of life—for imitation it required nothing more than enthusiasm and poverty. I, too, wanted to become a great scientist.

In my student years I still tbought I should be able to get everything I wanted in this sphere. I was confusing enthusiasm with talent. Especially as with Faraday it looked the simplest thing in the world. He had no trouble with mathematics or formulae, and did his experiments with the most primitive equipment. It was only when I was doing postgraduate work tbat I began to understand something about the simple, apparently monotonous life of this man.

Faraday was thirty-one when he wrote in his notebook: "Convert magnetism into electricity." It was the way people jot down things they have to do on their desk calendars.

He was intested in electro-chemistry, light and magnetism, but all the same was not to be deflected from his main task.

He spent ten years trying one way after another, devising more and more new combinations, posing more and more questions. His imagination was inexhaustible. This was how Johann Sebastian Bach constructed his fugues, carried away by infinite variations on a theme. It was how in the *Farewell to Arms,* Hemingway wrote the last page 37 times.

Tragedy brings great men closer to their fellows. Althougb Faraday suffered an almost total loss of memory, he continued with his research. It must bave been as agonizing as Beethoven's deafness. Faraday's courage was an example to me.

I bad known that be was buried in Westminster Abbey next to Newton, and there in fact was a large tombstone inscribed to the memory of Isaac Newton.

I thought what a great example these two lives had been to me, of what infinite value they had been.

The sound of many voices rose to the abbey vaults. People sat in the pews praying. On their faces was a faraway, intense look, and they took no notice of the bustle around the tombs of Sbelley, Byron, and Kipling, or of the guides pointing out the Unknown Warrior's Tomb. I, too, had no inclination to go anywhere or look at anything. I stood by those stones that seemed so dear to me and thought of how I would never become a scientist, after all, that my dream

would never come true. Nothing remained of my childhood, my youth, nothing of those bright bopes of victorious researcb, nothing but my bitter-sweet love for these two illustrious names.

But they deserved my gratitude for that, and for the fact that they had now set me thinking, wondering whether I had lived my life as I should bave done. In the old days pilgrims visited boly places in order to be filled with boliness themselves, and it was not such a stupid thing to do.

Outside the sun was shining. Somewhere overhead Herscbel's binary stars were twinkling away unseen. The Earth was moving according to Newton's laws, and light according to Maxwell's equations, in Baker Street Sherlock Holmes was sitting on a bench and puffing away at his pipe, and not far away Dickens was living. Then I began to remember, one after the other, Wells, Rutherford, that mysterious eccentric Lord Cavendish, Bernard Shaw, and J. D. Bernal. I also recalled Allan Sillitoe—and how I had sat drinking beer with him in Leningrad.

I had not dreamt I had so many acquaintances here. Strange that it bad never entered my head before! I could bave my own England, whicb had been written about nowbere, which coincided with no one else's. I had dropped out of the prescribed order of things. Henceforth I would not be assured of a tried and tested itinerary, and feelings supplied free of charge. I was a little alarmed at the thought of it, hut it was too late.

A Shattered World

Pictures hung from the iron railings. The bright canvases were all the way along the edge of Green Park and then continued along Hyde Park. I jumped off the bus and strolled along this open-air art gallery. I bad seen something of the sort in the old part of Warsaw, where young artists sbowed their paintings on Sundays by the fortress walls. But this was on quite a different scale, it was a kind of Babel of paintings.

In my heart of hearts I was hoping that now I would see something extremely modern, something rebellious, that was not acceptable to any of the art galleries, some "underground" talent.

On the railings there were absolutely all fashionable trends represented. Take your pick—you can have paintings in the style of Marquet, Chagall, or Van Gogb. Prices are moderate, they changed bands at anything from a couple of ten shilling notes to a couple of tenners. Paintings, etchings, pottery, water colours . . .

I liked some of the things, for they stimulated the imagination with unexpected combinations, some were simply beautiful, others mystifying.

At one time I was to some degree attracted by abstract paintings, finding in them a freedom of conception, imagination, a lack of restraint of emotion and mood I did not see enough of in traditional painting. My attitude was strengthened by a feeling of protest—I did not want anyone to tell me what to like and what not to like in painting.

But a few years had gone by since then, passions cooled, and I fell out with the abstracts.

It happened in Australia. As behoves one who is making a first visit to a strange country, I conscientiously did the rounds of the art galleries of Sydney, Melbourne and Adelaide. With the help of its artists I wanted to get a better understanding of Australia, to catcb the spirit of its farms and deserts, to see its people, get the feeling of its everyday life, its character and the history of its culture.

Subconsciously I was expecting to get approximately the same idea of the country and its art as a foreign visitor gets of Russia in the Tretyakov Gallery in Moscow or the Russian Museum in Leningrad.

Far from it. Most of the space was given over to abstract paintings. The same as hang in the galleries of Paris, Rotterdam and Stockholm. I could see nothing of a national character in these Australian dribhles and blots. Somewhere in the vaults paintings by older generations of Australian artists were stored, but there was no room for them on the walls. Then I felt the arid inhumanity of abstract painting. It had *nothing*. It was a void that could not be filled however much my imagination ran riot. My spirits sank.

I visualized the complete triumph of the abstracts, all the galleries of the world hung with these stains of colour. And with nothing else. A shattered world, one bereft of man, thought, communication. No, I can't take it, I said. Enough.

I walked a second, and perhaps a third kilometre along this street market of paintings. There are bad artists in every country, but I bad not imagined there could be so many! My legs hardly belonged to me. There is nothing so wearying as mediocrity. This was a parade of mediocrity, and it was taking place right near the National and the Tate galleries; magnificent museums as good as any in the world.

I do not mean to insult those gifted artists who are obliged to earn a living by the railings of Hyde Park. For them it is a good thing that such a Sunday market exists. I am speaking of the general impression. A great concentration of untalented work can overshadow any kind of talent. You don't want to look any more. You begin to think there cannot be any good films, or that an anthology cannot contain any good poems.

Where Is Loving Allowed?

I recalled one of our own exhibitions, a long time ago. Empty salons, vast canvases sbowing identically joyful collective farmers, steel smelters, builders of hydroelectric stations, lathe operators, and children, and all of them good-looking, all of them strong, all against some symbolic background, and all of them marcbing into the future. In the visitors' book I read the following comment: "We liked your exhibition very much. Everyone is so polite, no one pushes into anyone, our thanks to the management—from a party of blind visitors."

On an expanse of grass in the depths of Hyde Park I threw myself down, stretched out my aching legs and stared with pleasure at the grey-blue sky, light and empty,without a hint of a cloud.

A feeling of tranquillity gradually stole over me.

The paintings were on the other side of the railings. There was no blaring music, no fairground with swings, sbooting galleries, snack-bars, dancing and roundabouts, only grass and lakes, with no one to spoil your view of it all. Because of it everything seemed more natural, more beautiful, and the people seemed more natural too. They lay or sat on the grass, kicked off their shoes, free of the crowded streets and of any desire to be entertained.

A tourist from our party called to me. She was tired, too, and was having a rest nearby in a deck chair. I suggested she take her shoes off, but she felt awkward about it. She was a very nice woman, gay, charming and well-read, but something or other made her not altogether comfortable. I lay there with no shoes on, one leg thrown over the other. She said nothing, but I sensed her disapproval of my loose ways. She made it clear to me a few minutes later, pointing to a couple lying on the grass not far away—they had their arms round one another and were kissing. No one was paying any attention to tbem, and I, too, was looking in another direction.

"They shouldn't do it here," she said. "It's a public place."

"Why does it worry you?" I asked in a frivolous tone, not wanting to get involved in a serious discussion.

"No, no, don't laugh. You wouldn't start kissing in full view of everybody, would you!"

"It depends with whom."

"Oh, stop joking," she asked with a frown. "Doesn't it bother you at all?"

"I don't look at them. And I advise you not to. If you start pointing at them you may be in trouble with the police and find yourself having to pay a fine."

"Are you serious?"

"A tourist was fined quite recently."

"So the law's on their side? Isn't it a disgrace? There's morals for you!"

I sat up, hands clasped round my knees. I wanted to get a look at her face.

"Where do you think kissing ought to be allowed? In the doorways? Is that more moral?"

She blushed rather prettily.

"Well..."

"If you look around, you'll see there's a shortage of doorways in England. Or rather, there are quite a lot of them, but they're all shut. Most of them lead into private houses."

"But why should I have to tolerate such things in the park?" she demanded. "I find it offensive. If one reasons your way, then nothing is barred. What do you consider loose morals to amount to then?"

"All right," I replied. "I'll grant that I don't find it pleasant, either. But why should our taste have to be regarded as a moral standard?"

"You're forgetting about the children! What an example to the children!"

"They should be out with their parents, after all."

"Thank goodness it's out of your hands, otherwise we'd have the same kind of thing going on in our country. And even without that there's some disgraceful behaviour . . ."

"Aha!" I said. "I've got you, now. They don't allow it in our country, yet there's still some disgraceful behaviour. Maybe there's no connection between the two things, but perhaps in fact the case is quite the opposite."

"Meaning what?" But at this point she made a despairing gesture. "You're impossible to argue with. I know you don't like it yourself, but you just want to seem modern. Probably you didn't even condemn those obnoxious abstracts along the railings."

"You've guessed wrong!"

"Aha!"

"But all the same it's not worth forbidding it," I said with utter sincerity.

"But surely there are some things..."

"Probably," I answered, "probably there are. Incidentally, it's better to try them yourself. Take the example of chewing gum. You remember how everyone said what awful stuff it was. But I bought twenty packets. A wonderful thing. I chew instead of smoking. I've got right out of the cigarette habit now."

"That's not a proper example."

I put on my shoes and got up. We walked away. After a few steps I stood still, took her in my arms and kissed her.

"That's not a proper example, either," she complained.

Scotland and Its Puzzles

The first thing our interpreter told us when we met her was that she was not an Englishwoman but a Scot. For all her gentleness and kindness, she was adamant on that point. As far as I could gather, the Scots seem to think that England is part of Scotland—and not the best part, either.

Outside Edinburgh Castle stood a Scottish rifleman in a kilt. I stood before him, weighed down with persistent meditations that were leading me nowhere. Over the kilt, just about over what one might call the most indelicate place, hung a great white purse. All the guards had them, and I stopped in front of each one, tortured by the question: "Why?" It was like some refrain going round and round in my head: "Why do soldiers need purses? . . . Why do soldiers need purses? . . ."

The tourist Scotland consists mainly of castles, plaids and Mary Queen of Scots. There's nothing bad about that. Every country, every locality, must have its exotic element. Our Pskov, for instance, is renowned for its smelt, tiny fish about half the size of your little finger. There's no other place in the world, probably, where you can get such smelt, a plate of dried ones, or a helping of cabbage soup made with them. But in Pskov you can. And that's just as wonderful as the bathhouse in the Russian countryside, with its bundles of birch twigs, and embroidered towels, just as wonderful as Scotland's kilts, her plaid rugs, the bright tartans to be seen all over the country—in hotels, on book-bindings, everywhere.

"Why do soldiers need purses?"

"It's obvious you've never worn a kilt," a soldier replied. "They don't have any pockets!"

It was so simple that I blushed.

But most of all I was interested in Mary Queen of Scots.

It is amazing how that woman managed to leave memories of herself everywhere. One gets the impression that she dashed deliberately from castle to castle in order to be incarcerated, or organize plots, murders, explosions, attempts on people's lives, and flights.

We saw the casket containing the letters that betrayed her, we saw her favourite embroidery. They showed us where the Queen's secretary, Rizzio, had been dragged out, where he had been killed. Here were the stains of his blood.

Our guide, a slender young lady with the air of an early Goth, was even now, four centuries later, moved to tears by the fate of Rizzio. We were infected by her emotion. Poor Rizzio! Just imagine, we had never heard of him! We were ashamed of ourselves and tried to make up for lost time. We suffered for him, we crowded around the armchair behind which he hid and the four-hundred-year-old bloodstain on the wooden floor.

He had been stabbed fifty-six times with a dagger. Someone counted the stabs. Perhaps the representative of some tourist agency? Whoever it was stood there and counted the stab wounds. Our tortured eyes swivelled round to Rizzio's portrait. Incidentally, it turned out in the end that it was not Rizzio after all, but Darnley, the

Queen's husband, the man who killed poor Rizzio, and who, according to some accounts, was himself killed by Mary.

Generations of guides bave fed on the Queen's adventures, generations of tourists have carried away notebooks filled with basty jottings. Without the story of Mary Stuart, embellished somewhat by novelists and playwrights, Scotland's castles would not look nearly so interesting, and tourists would not bother to climb the hills and steep staircases. Tourists like to be emotionally involved.

Personally I went through the whole gamut of emotional experience. I found it pleasant to believe in these old tales. I enjoy being deceived when the sole aim is to give me satisfaction.

Scotland's castles are beautiful in themselves. Gates of wrought-iron tracery, sombre stones, blossoming with green moss, and in the middle of the courtyard lawns that are greener than green—it has taken centuries of cutting to develop that unspent fury of green.

The castles are kept in an ideal state of preservation. Conducted parties are going round the whole time, each castle is a hive of activity—this is the heavy industry of the tourist business.

As we got to each new castle my suspicions of Mary Stuart increased. Everything was just a little too well preserved, just about every trifle associated with the hapless Queen except her favourite cats. As though they had the gift of prophecy, and had prepared for our visit four centuries in advance. The lady appeared to be a pastmaster at plots and intrigues, and it bas taken the historians all those centuries to unravel the machinations. But I am afraid her major intrigue bas remained undiscovered—her secret treaty with the tourist agencies.

The Thirteen Steps

After a visit to London it is worth re-reading Dickens, for you find a host of details and subtleties that previously meant nothing to you. This is true of any author and the places he is associated with, and I have found it particularly so of Dostoevsky.

Once the author's grandson, Andrei Fedorovich Dostoevsky, took me round Leningrad to show me the places associated with Dostoevsky's *Crime and Punishment*. To begin with it was like listening to any historian with real enthusiasm for his subject. But suddenly I had a shock as he announced: "There used to be a gate here, and in the courtyard stood the stone beneath which Raskolnikov hid the valuables stolen from the old woman." He said it with utter conviction and tben noticing my look of bewilderment, opened Dostoevsky's novel and read out the relevant passage of description. It fitted exactly, hut at this stage I was prepared to put it down to coincidence, nothing more.

Then we went round the corner, to a house in the next street where, announced Andrei Fedorovich, Raskolnikov bad lived. As if by design, both house and courtyard had a dreadful look. The courtyard was filthy, with broken chairs, old rags, and rubbish bins all over the place. We walked up a dark staircase with worn stone steps to the garret which was supposed to bave been Raskolnikov's dwelling.

Andrei Fedorovich read out another passage: "His garret was right under the eaves of a tall, five-storey building . . . His landlady lived one floor below, and eacb time be went out he was obliged to pass ber kitchen, which was almost always wide open to view from the stairs."

There was in fact a garret approached by thirteen stairs—the number specified in the novel, and tbe staircase did lead past a flat with a kitchen that had a window on to the landing. It was the only staircase in the building that fitted the description in any way.

This layout was of great importance to the novel, and to Raskolnikov himself, for it was in this kitchen that he caught sight of the cbopper he intended to use for the murder. But at the fateful moment the woman was in the kitchen and he could not get it—he was suddenly confounded by the trifles he had considered incapahle of standing in the way of his own strong will.

Andrei Fedorovich went on reading and I followed Raskolnikov down the stairs to the courtyard, where he stood dispirited until he suddenly noticed an axe in the janitor's cubby hole. The cubby hole was approached hy two steps, according to the book, and so it was in reality.

We set off for the house where the old money-lender had lived—"exactly 730 paces from his bome".

I, too, counted the paces. Dostoevsky was right. He was also right about the narrow staircase with the polished copper knobs on the bannister (they were still there) and as we went up to the apartment of the old woman all doubts left me.

But then I started wondering why Dostoevsky had to be so scrupulously accurate about all these details. After all, there was no Raskolnikov. Yet there was his garret, the thirteen steps and all the circumstantial supporting evidence.

Dostoevsky himself must have been over the scene of the crime like a detective, with the difference that the crime was never committed.

Why could he not have made the whole thing up? It would surely have been quicker and easier to invent tbe topography. And to what extent did he carry this passion for authenticity? Perhaps Dostoevsky himself, and not an imaginary Raskolnikov, spotted the gleam of an axe in the janitor's cubby bole?

But here, I feel, we are getting into such a shadowy, shifting, mysterious realm that it is better not to investigate too far . . . .

One thing is clear to me now. How much remains unprobed beneath the apparently crystal-clear surfaces of Dostoevsky's St. Petersburg and Dickens' London!

Seeing Things as They Are

The fire was blazing, and I sat with legs outstretched before me, a cigarette in one band and a glass of whisky in the other, gazing into the flames. The whisky was called "George IV", and on the label was a picture of a ruddy-faced king. I picked up the bottle and studied the royal face.

"Well, how do you like the whisky?" asked MacLister senior.

"Fine," I said. "It's pretty strong."

Zoya Semyonovna nudged me.

"Don't give him the idea we're savages who've never seen whisky before!"

"But I never have seen whisky like this!"

"All the same, you don't have to make it so plain."

"Harry," I asked loudly, "have you ever drunk *kvass?* Eva, translate, please—*kvass.*"

"No," he said. "What is it?"

"And have you drunk home brew—beer or spirits? You see, dear Zoya Semyonovna, he still manages to be a civilized type. Why should I be expected to know about whisky if he doesn't know about kvass?"

She gave me a very reproachful look, and I felt that she was ashamed of me. She seemed to be doing everything she could to show our host that all this whisky and English sandwiches were nothing out of the way for us, that we had no such thing as kvass, and if we had, it had been handed down by our forefathers, of whom we also disapproved because of their inordinate enthusiasm for it, and generally speaking that we were not ourselves at all, since the British could hardly respect the samovar, cabbage soup and black bread, but only satellites and lasers.

Yet she was in raptures over the smoking open fireplaces and the tiny patches of front garden, and had not the courage to turn up her nose at the unaccustomed and horrible-tasting tea with milk or the idiotic bathroom taps without mixers—which left you with a choice between ice-cold and boiling hot.

When we got back from the MacListers she asked me what had especially struck me as typical of the life and habits of a British family. She assumed that as a writer I must have great powers of perception and observation, etc., etc.

But to my shame, I could not produce any observations of the kind she wanted. I spent the whole evening chatting with MacLister senior. "What about?" asked Zoya Semyonovna. Here I was quite at a loss. He was a foreman at a radio works, and we had been discussing the future of transistors and radios in general.

"Couldn't you have talked about that in Leningrad!" she exclaimed. "Was it worth coming to Britain for that?"

She was right, but I was comforted by the thought that he had shown me a front-door bell he had made himself, with melodious chimes instead of an ordinary trill. He had also made a kitchen table and reconstructed the sink.

As we got farther and farther from the MacLister menage, I thought up all kinds of questions I should have asked that evening—I could have elucidated their views on all manner of subjects and later arranged them mentally so that I had a complete picture of the life of an ordinary British family. Instead I had sat by the fire swigging whisky.

Oddly enough, though, I had a continuing sense of pleasure from that evening, outweighing any feelings

of regret. I was left with a sense of calm, I had not received a stream of information but had simply made friends with the MacListers. I still recall that blessed sense of tranquillity and absolute freedom from all cares. The little "castle" of the MacListers, the garrisons of neighbouring "castles" which came to see the Soviet visitors, the narrow, spartan children's beds, the minute, carefully prepared sandwiches.

We had met the MacListers by chance, at some reception. They had invited us to their home and called for us. Why? However many times I have encountered such hospitality abroad, I have never managed to take it for granted.

I do not know how the British receive Frenchmen, Italians, and Danes who are strangers to them. But I feel that to the MacListers we were not simply foreigners, we were *Soviet* people.

Of what is their attitude compounded? Probably it includes curiosity, misgiving, and disagreement. But if you set down all the components and strike a balance, you will be left with a feeling I shall express in their own words: "We need the Russians." We are needed—and I feel we are needed in some way. We are already at the stage when the world cannot get along without us, any more than it could go back to being flat.

Before we left Glasgow, a reporter from a local paper came to see me. He was polite, but a little mistrustful. He asked how I liked Glasgow, and I told him that I did not like it—it was black, dismal and ugly. He suddenly brightened up. He did not like it either. We ordered coffee and sat there a long time running down Glasgow and lauding Edinburgh to the skies.

The reporter took off his sunglasses, and I could see he had clever, twinkling eyes.

"You know, it's a good thing to have seen dirty houses, overcrowding, smoke and soot."

To begin with I did not understand why this should be a good thing, and it was only later, when I was already on the plane, that I remembered a West German writer we had taken round Leningrad. He was a good man, an honest writer. He wanted to see everything just as it really was. We took him to old wretched blocks of flats with dark, narrow wells instead of airy courtyards, we took him to overcrowded flats occupied by several families, we drank beer with him—inferior stuff—at street kiosks. He visited smart restaurants and squalid canteens. He travelled on our immaculate metro and our bulging trams. It was not very pleasant showing him things as they really were. We saw how disappointed he was with what he had seen. Yet a year later he came a second time, then a third. He told me he had fallen in love with our country because he had seen not only its good side but its bad side, too. He had seen the movement of life.

Like any other love, love for a country develops in a confused, mysterious way.

An Inflammable Name

Many years ago a young actor made his debut in a Moscow theatre. His name was Alexander Pozharov, or in English, Alexander Fiery. He was a tremendous hit and at the end of the play his fans started shouting, "Fiery, Fiery. . . ."

At the back of theatre someone shouted "Fire!" in a panic and a wild stampede for the exits started.

The next day the management firmly insisted that Pozharov change his name to something less incendiary. He chose the name Ostuzhev—or roughly in English, "Cooled". Under this name he became one of Russia's most famous actors and won world fame for his interpretation of Othello.

Once when he was acting in a play called "Velvet and Rags" he was so carried away by his role that in a fight scene he broke his colleague's arm. The victim, Stepan Kuznetsov, declared it was impossible to be on the same stage as Ostuzhev.

"He's like a wild animal. Who ever heard of breaking a fellow actor's arm? I refuse to act with him any longer. The next thing you know he'll kill me . . ."

"I beg you to forgive me, Stepan," said the embarrassed Ostuzhev. "I am terribly sorry, but what can I do? I am fond of you, but I hate the man you are portraying."

THE MAN FOR WHOM BASKETBALL WAS INVENTED

by Anatoli Pinchuk

from the magazine Smena

When asked how the stars of professional American basketball played, John Maclendon, US national coach said: "Just like your Volnov plays."

When a great sportsman comes to the end of his career, he often becomes the subject of legend.

In time fans in the stands will tell the legend of Gennadi Volnov. Perhaps the Volnov legend will be that he could do everything he wanted to, and everything he had to, and that everything he did do could be done only by him.

But the time for legends had not yet come . . . .

Volnov is no lover of rough play: he is known as a fervent champion of clean basketball. And when it happens that technique gives way to strength, Volnov's game begins to fade. It is not timidity—it is something typical of many players who like to rely on skill—a revulsion from brute force.

In Soviet basketball there are snipers who can put in a long shot and aces who drive in low just as well as Volnov. There are also players who can do both these things well. Though they do not

excel in every game they play, they are rightfully considered very good players. The difference between a very good player and an outstanding one is that the latter is in top form in every game, while the former is good in patches.

There is another feature attractive about Volnov. He is elegant. Everything Volnov does is done flawlessly, beautifully, in technique or tactics, defence or attack.

Volnov was the first European basketball player to get the ball into tbe basket with two hands over the hoop. Many other players have since learned to do the same. But I have never seen anyone able to place the ball into the basket so neatly and at the same time so naturally as Volnov. His manner of playing is polished, yet casual. His movements about the pitcb have clockwork precision. Coaches training children try to teach them bow to dribble Volnov-style, to take set shots Volnov-style and, in general, play Volnov basketball. But this is next to impossible because, to be like Volnov, you have to be born a Volnov.

In the United States of America, where basketball was invented, they say that if a boy has not taken a shot at the hoop by the age of 12, he may as well not try. No matter how talented a youngster may be, he will never become a good player: a five-year delay in basketball is insurmountable.

As a child Volnov could not boast of good health. He had almost all the diseases in the book, including six bouts of membranous pneumonia. Gennadi's scboolmates were mad about sport, but he was indifferent.

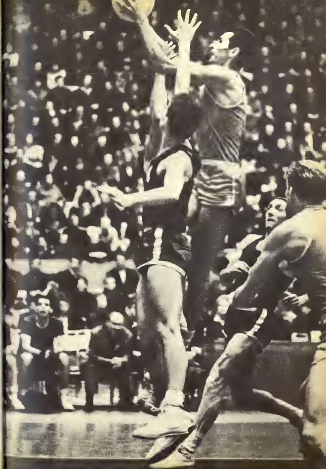
"I did not care for sport at all," Volnov told me with a broad smile, appearently finding it difficult to credit that there was a time when he could live without sport. Tben he added: "I simply did not know what sport meant. . . ."

And so, at the age of 17, be made quite an elementary discovery—you can only like or dislike something you know. And in the end, his nihilism gave way to curiosity. His friends managed to talk him into going to the stadium. He was not interested in seeing basketball, but in seeing the two tallest hoopsters in Europe—Uvais Ahtayev and Janis Kruminsh. Instead he saw basketball.

He realized bow silly he had been and how much he had lost. Nevertheless, he was determined to sign up for basketball the next day; maybe they would take him—after all he was over six feet in his socks.

His debut was on August 14, 1956, in the Latvia-Kazakhstan game of the First National Sports Festival. Three years later Volnov was playing for the Soviet Army and the USSR national team.

In praising his first coach, Vitali Yaroshevsky, Volnov bad no intention of slighting the rest of his coaches. He was simply giving credit to the man "without whom I simply would not have become the player I am today". Perhaps Volnov



overdid the praise somewhat—in fact, I am sure he did. He is usually a man of few words, and since his restraint vanished there must have been good reason.

I met Yaroshevsky at the end of 1957. He was coaching the Moscow Spartak team and I had to do a story on his hoys. He said of Volnov: "Take a look at that boy. He is not a very good centre yet, but in a couple of years he will be the best one in the country."

At that time I was not impressed. But some three years later I recalled that conversation and asked Yaroshevsky why had been so sure of Volnov from the start. He countered my question with one of his own: "Do you see boys with a build like that every day? James Naismith invented basketball especially for Volnov."

At the age of 17 Volnov was not much of a runner and his jumping was even worse. He tired easily, and it required a vivid imagination to call him an athlete. The first commandment he heard from Yaroshevsky was: "Basketball is a foot game." Volnov then lived on the sixth floor and Yaroshevsky forbade him to use the lift.

"When I spoke to Volnov," said Yaroshevsky, "I had a feeling my words fell on deaf ears. He seemed to listen quite intently, but there was no response or enthusiasm."

Yaroshevsky need have had no misgivings. Gennadi knows how to listen to a speaker, hut does not like to speak himself. An order to him is an order. So began running up six flights of stairs, at first slowly, then several steps at a time, all the way up to the sixth floor, three times in a row, ten times a day. In the winter both coach and pupil amazed people by running around knee-deep in snow. When the coach hecame tired, he rested, but Volnov just kept running.

The coach did not train him to plunk in shots from rebounds off the backboard, in the way that many coaches schooled their taller payers, for he was afraid Volnov would hit a rut and become a rebound player. He made him do something else a little less orthodox. Why should a pivot have to know how to drihble? Take a look at Kruminsh—he never drihhles but always comes off the floor with at least 20 or 25 points to his credit. But Yaroshevsky really made Volnov sweat with dribbling drills.

Said Volnov: "If I chalked up 6 points a game I considered it was pretty good. My team-mates were hrowned off with me, but they kept quiet. I knew why—Yaroshevsky had put a ban on saying anything to me except "Attaboy, that's the way to hustle!" But I realized that I wasn't doing much good. They were only saying it to keep my spirits up. Really, I felt a bit of a heel."

The jump shot appeared in Soviet basketball some ten years ago. This shot has an obvious advantage over the shot from a static position. Most basketball players, both in our country and abroad, try to jump as high as possible before

taking such a shot. Volnov, a wizard at jumping, lets go of the ball almost as soon as his feet leave the floor. Doesn't he realize that the higher he jumps the more difficult it is to cover him?

"Of course, I realize it. But this is what I thought of when I practised this shot. First of all, I am not so short and there is really no need for me to jump as high as possible to make a long shot: it is pretty difficult to cover me anyway. Secondly, to jump high, you have to crouch a little before springing and this, of course, is a dead give-away. By jumping up on almost straight legs, I gain several tenths of a second. And thirdly, count how many times a player of my height has to jump in the course of a game at both backboards and in jump shots. I am not saying this because I feel sorry for myself. Such jump shots would best of all be made by an automaton: jump up—get the ball—and take a shot . . . jump up—get the ball—and take ,a shot. This means you have to aim at being a untiring automaton."

Once Volnov told me that the thing he valued most was a good pass, then good defence work, and only then a good shot. So why after weighing it all up so realistically did he become a grand-master of attack and not a master of passing or a master guard? And if he wanted to he could have become any of these, for this talented and hard-working sportsman knows no such word as impossible in basketball. The secret is that he understands how to rationalize his game and his capacities.

For many years he played with another basketball star, Armenac Alachachyan, the king of the pass. Volnov could not help appreciating the worth of a player like Alachachyan. But he knew that Alacbachyan was often dressed down for making two bad passes—people were apt to forget that for every two failures there were thirty passes that clicked. Volnov knew that almost every second basket was scored thanks to Alachachyan, and he also knew that after each game Alachachyan was put on the carpet for low scoring . . . .

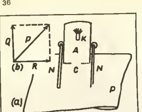
So this most rational of all players understood that if in each game he scored 20 points, he would be considered good. If he scored 30 points, they would call him excellent. And no one would expect him to pass, no one would dare hold it against him that in defence he did not play as well as he could.

But after all is said and done Volnov is Volnov. He is a versatile basketball player. This all-round talent does not allow him (even if he wanted to) to be tops only in attacking. And the fine words of tribute from John Maclendon confirm this.

Gennadi Volnov's laurels are many. He has been in five European champion teams and in the 1967 World Champion winners. And if Volnov, as a member of the USSR National Team, helps to win the Olympic gold medals, then it may be time for a legend.

STRIDING INTO THE UNIVERSE

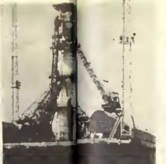
There are rare events in the history of mankind which mark the beginning of a new epoch. One such was the launching of the first sputnik on October 4, 1957, blazing a trail into the cosmos. The photographs on these pages show some of the landmarks in the exploration of outer space.

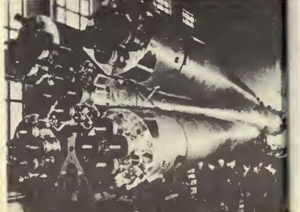


Nikolai Kibalchich, who as far back as 1881 designed a jet-powered flying machine.

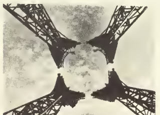
Konstantin Tsiolkovsky, father of Soviet rocketry, with a model of a rocket designed by himself.

In 1933 the first rocket with a liquid fuel jet engine was launched from a site near Moscow. It was the product of the "Group for the Study of Jet Propulsion", which worked under Sergei Korolev, the spacecraft designer (extreme left).



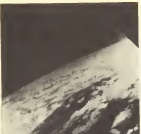


The space carrier rocket Vostok (a still from the film "Ten Years of the Space Age").

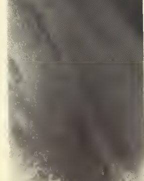


The metal arms which support the rocket on the launching pad.

The joyful meeting between Sergei Korolev, the spacecraft designer, and Yuri Gagarin, the first astronaut, after Gagarin's historic flight.



How the earth looks from cosmic space—photograph taken by Herman Titov, the astronaut, from a height of more than 150 miles.



John Kennedy, late President of the USA, greets Herman Titov. On the left is the American astronaut John Glenn.

When Pavel Popovich was preparing to fly into outer space, his wife Marina was getting ready to break records in a high-speed jet-plane.

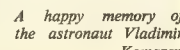
Valery Bykovsky and Valentina Tereshkov-Nikolayeva, who made a twin flight into space. Back in Moscow they are still in step.

Andrian Nikolayev, the astronaut, with his daughter Alyonka.

Like all the other astronauts, Valentina Tereshkova had a gargantuan appetite on landing.

Left to right: Pavel Belyayev, Vladimir Komarov and Alexei Leonov in the bus taking them to the launching ground before the flight on which Leonov became the first man to walk in space.

The Voskhod-1 crew back home. Left to right: Boris Yegorov, Konstantin Feoktistov and Vladimir Komarov.



A happy memory of the astronaut Vladimir Komarov.

The Moon is our nearest neighbour in space, yet until recently it remained a stranger. There are legends and contradictory theories galore about it, and it is only since a space apparatus has reached the Moon's surface and photographed it that man has begun to obtain more and more reliable information about our natural satellite. The Lunar epic continues.

THE ABYSS OF THE UNKNOWN

by Pavel Barashev
condensed from Pravda

Doctors tapped, sounded and examined every square inch of their bodies before finally recommending only one in 50 to go on to the research centre for further trials. After some 30 tests, only one candidate in 20 found the magic words on his medical chart: "Qualified for inclusion in astronaut test group."

They knew what awaited them. They would be catapulted up, down and sideways; they would be kept in solitary chambers for long periods of time; they would be revolved in centrifuges and "hoisted" to 30-mile heights, then "flung" back to the ground. In brief, they had an idea what to expect and no matter what strange experiment came up, never once did doctors hear a refusal.

Roman Kotsan and Stasis Mostvilas were asked to subject themselves to a protracted bypodynamic experiment. His eyes twinkling mischievously, Stasis asked, "Hippo—isn't that something like a horse in ancient Greek?"

"Hippo is, but *hypo* means 'sub' or lower. In this case it means a reduction of the physical tension of tbe organism," explained Dr. Alexei Voskresensky. "The experiment involves a protracted condition of extremely restricted movement and the complete absence of any load on the muscular system."

"Good! That's our chance to catch up on some sleep," Roman joked.

"We'll see," the doctor said mysteriously.

In a big bare room a Khilov swing was suspended from the ceiling—an ingenious contrivance of hinges, steel cables and pulleys so designed that the bedboard would always remain in a strictly borizontal plane, despite any pushing or twisting. The person on the bedboard would also always remain in a horizontal position. When Stasis tried to take a drink and it went the wrong way (just try to swallow water lying flat on your back), the swing, under the impact of his coughing, simply seemed to lunge downward. The ceiling rocked and Stasis curled up instinctively in order to restrain his bed which seemed to be sliding away from under his back.

"Like weightlessness," be told Roman in a low voice.

Roman was lying in a similar contraption. He was to the right of tbe door, and he also felt very queer.

"Yes, very much like it," Roman agreed, trying to avoid breatbing deeply. "I just raised my hand slightly and thought I would fall through."

"I guess we'll have to stay motionless."

"That's right, boys," Ravil Gismatullin, a leading researcher of the group said, "that's just what we want. Lie still."

At first glance it may seem an unjustified cruelty to ask healthy young fellows to lie flat on their backs bour after bour, day after day, looking at the white ceiling, motionless except for slowly turning the pages of tbe books the assistants set up on special props in front of them.

"This experiment is of extreme scientific importance," explained Voskresensky. "First and foremost comes the general biological problem. In our age of automation and advanced technology all of us are becoming more or less bypodynamic. Moreover, one-third of our life is spent in sleep—that is, in a horizontal position, witb our 'posture' muscles out of operation. Just imagine: a patient with a severe coronary is hospitalised and tbis grave condition chains him to bed for an excruciatingly long time. The doctors have before tbem a patient they know nothing of, they are in no position to separate the previous pattern of the organism from the present. That is why hypodynamic experiments on healthy subjects reveal much that is new to medical science.

"The second problem is emulation of space-flight conditions, involved as they are with weightlessness, sharp restriction of pbysical loads on the muscles and changes in the vital activity of the organism.

"True, out there," tbe doctor stressed the last two words, "it is mucb easier from a psychological point of view for a bealthy, normal person. He is there for a purpose: fulfilment of a flight plan, radio-communication with Earth, strictly timed tests and observations. Our boys had nothing. . . ."

They really had nothing. Not even clothing, since any fold or seam might restrict circulation. They lay on their swings, stripped to the buff, eating, sleeping, reading, and putting crosses on a calendar, marking eacb new day at 12.30 Moscow time.

One day Roman asked, "Stas, what's the date?"

"The seventh."

"Only the seventh? My back acbes like an old granny's. . . . What are you reading?"

"Balzac's *Splendeurs et Misères des Courtisanes.*"

Roman chuckled but felt a shooting pain in his abdominal muscles. "Do you feel the same thing?" he

asked. "Yes. What I wouldn't do for a walk or a 100-metre sprint!"

"How about going dancing in the evening?"

"Sure," Stasis agreed, "but we'll have to press our suits first."

On the 23rd day Roman was so filled with an insidious, dull, infinite pain all over his body that it took all his will-power to keep from jumping out of the swing.

They had already repeated all the jokes they knew over and over again when Stasis unexpectedly heard Roman laughing, but almost silently, so as not to make his swing move.

"I just thought of another one," Roman said.

They chuckled a bit at the anecdote about the man who was told to lie down and rest a while in order to get rid of his inclination for work.

The pains in their bodies were now particularly acute, like one vast toothache. The longing for action was almost irresistible, the urge to draw themselves up to their full height, to lift some heavy weight, to run around a track.

Just boys. They laughed and it did not occur to them that a normal human being could lose the urge to work, to move around, to do something besides look out of a window at a weak little spring twig on a poplar.

Yet it happened to them several weeks later. The longing for work, for movement, disappeared into thin air and they felt as if they had been living this way all their lives and that everything was normal. Thus the organism, weary of struggling against inactivity, had adapted itself to a world devoid of work or resistance. Now they were in for day after day of this new state.

"It must be fine at home now," sighed Roman.

After a few moments he began to talk about Chernovtsy, the town where he had been born and brought up, and where he had attended secondary school and later become a construction worker. He talked about his mother. "What fine *borshch* she makes! And boiled dumplings! What's your favourite food at home, Stas?" Stasis made no reply. Scraggly-bearded, like a Robinson Crusoe, he kept on staring at the ceiling.

"Are you asleep?"

"No."

"Why don't you say something, then?"

"I've got nothing to say. My dad was killed in the war, Mum died. I grew up in an orphanage. In Vilnius. . . ."

"Sorry, Stas . . . When we're through with this you'll come home with me and we'll have plenty of dumplings together. . . . How many days have we got left?"

"Plenty." Stasis counted up the empty squares on his calendar.

They no longer dreamed of dancing or felt like reading about courtesans. The football field was a hazy green carpet.

One morning they both woke up at the same time. Simultaneously they looked at the last uncrossed square on the calendar.

At nine o'clock in the morning Voskresensky entered the ward.

"Good morning, boys!"

"Hello, Doc! Well, at last?" asked Roman and Stasis in chorus.

Voskresensky seemed embarrassed. "There's this thing, fellows," he said. "To finish the experiment off properly it would be good if you stayed a bit longer." His tone of voice was neither very firm nor confident.

The young men were silent for a long while, then both said, "All right."

There was nothing else to talk about. A clock ticked away quietly, almost imperceptibly, like a pulse unaccustomed to the clear, precise beats of the heart.

When after more than two months the bed-rest test was over and each of them had endured the same centrifugal overloading as prior to the experiment, they were placed on an orthostatic table. This is a special board to which a person is secured and then it is swiftly turned upright.

"My legs!" was the thought uppermost in the minds of both Roman and Stasis when the doctors told them to stand up. "Where are my legs?" Instead of those useful limbs they felt as if they had loose, rubbery props. Both boys quietly said, "Down."

This was the word always used when someone found an experiment beyond the limits of physical and mental strength.

By the evening of the second day they had learned to sit up. Stasis decided to risk it. He got up and staggered to Roman's bed. For the first time during their long ordeal they shook hands and embraced each other.

"Let's wrestle, eh?"

"Can't. Different weight categories!" joked Roman, raising himself and leaning heavily against his friend's shoulder.

Indeed, they were in different weight categories. One of them had lost 15 pounds, the other almost nine.

When I interviewed Roman and Stasis several days after the end of their experiment, their handshakes were already quite firm. They easily walked up a short flight of stairs. Only Roman's somewhat odd gait—"My heels still hurt"—and Stasis's beard, were a reminder of their recent descent into the Abyss of the Unknown, of the fact that in the name of science they had endured one of those trials that demand a man's entire reserve of moral and physical strength.

DO YOU KNOW THAT. . .

. . . *The Kremlin's ruby stars, varying from 9.9 to 12 feet across, are on roller bearings so that they turn away from violent gusts of wind.*

* * *

. . . *Moscow, with three theatres in pre-Soviet times, now has 30.*

THE ANATOMY OF WIT

What is the secret of wit? Now the mathematicians have discovered how to model human behaviour and mental processes on electronic computers, is it possible to model wit? Here a Soviet nerve specialist probes the problem.

Wit under the microscope

by Alexander Luk, Cybernetics Institute,
Ukrainian Academy of Sciences

from Znaniye-Sila, a popular science magazine

Jokes and witticisms, as comparative studies reveal, depend on a rather limited number of devices.

1. False Antithesis

Example: "He is blond, but clever" *(Mikhail Zoshchenko).*

2. False Emphasis

Example: "Frau N. looks like Venus de Milo: she is as old and as toothless" *(Heinrich Heine).*

3. Reductio ad Absurdum

Example: "The pub servant was so lively, so vivacious that no one could see his face" *(Nikolai Gogol).*

4. Mixture of Styles

Example: "Gruh of the gods" *(Ilya Ilf and Yevgeni Petrov).*

5. Witty Absurdity

Example: "The reports of my death are greatly exaggerated" *(Mark Twain).*

6. Irony

Example: "If to do away with evil you aspire—why take all hooks and throw them in the fire!" *(Alexander Griboyedov).*

7. Paradox

Example: "The golden rule is that there are no golden rules" *(Bernard Shaw).*

8. Comparison Based on Remote or Casual Characteristic

Example: "Man's face is a mirror of his soul, which, incidentally, can be hroken as easily as any other mirror" *(Anton Chekhov).*

9. Ambiguity

Example: After 1812 this saying was popular in Russia: "Not all Corsicans are scoundrels hut the *Buona parte*".

"Buona parte", Italian for the greater part, is a pun on Napoleon's name.

Techniques of Wit and Emotions

All these methods can be lumped together under the head "technique of wit". To be witty, however, it is not enough simply to master technique. Witty content in the wrong form loses the suhtlety and flavour of wit, and evokes no admiration.

Nor is form alone adequate. It has long been known that witticisms age. Famous Russian nineteenth-century epigrams, for example, will no longer provoke loud laughter: the hutts of nineteenth-century jokes are not familiar to us, or, if they are, have lost much of their significance. Sometimes, however, the technique of wit is so fine that it keeps the joke going.

The key question is: can we learn to be witty by learning this technique?

Normal children speak correctly hy the time they turn six without having learned grammar. They observe rules of morphology and syntax without knowing those rules.

Some people, apparently, ahsorb the syntax of wit just as unconsciously. But the unconscious rules of wit, unlike the rules of grammar, are not accessible to all. Perhaps wit depends on innate ahility. If there is no ahility, nothing, not even special training, will teach a person to he witty. So, is it worth compiling an inventory of the techniques of wit if these techniques, even when collated and explained, cannot be used as a formula?

Wit and Creation

A witty idea comes in a flash. The flash of wit may come after lengthy, purposeful search, but nobody knows the devious ways of this mental process. We do not understand the workings of the brain which generate bright verbal "Kunststück". Such a flash of enlightenment is well known to inventors, scientists, writers, actors and artists. The solution that comes is based on certain rules which the cyberneticians call algorisms—rules of which man is not aware.

Research into the mechanics of wit is bound to reveal at least some of the laws governing creative processes. The formal devices just considered are, of course, not algorisms at all. They represent an attempt to analyse logically the forms wit takes in literature and oral speech. This attempt is not an end in itself. The author sees here a way of approach to the simulation of wit by computers. Simulation of wit promises to become an exciting area of research; it has been seriously discussed since 1962 and should benefit cybernetics and psychophysiology.

Aim or method?

by Leonid Likhodeyev, a satirist

Alexander Luk offers a ready-made table of wit as the first step toward building another computer.

I do not object to his occupation—no objections can be raised against any occupation that does not interfere with public order. I shall only observe that any analysis is the opposite of synthesis. By analysing the nature of humour we create prerequisites for synthesizing humour. Since synthesis is creation, it is the aim of some action. This is true of physics and chemistry and apparently of other forms of human curiosity.

But it is not true of humour and satire. For neither is the aim in the portrayal of reality. They are only the means to the aim.

Of course, Luk is doing a good job. I think it is good for psychology, cybernetics and biology. But it has nothing to do with satire or humour.

Wit is not a form of creation, dear colleague. It is a quality of the human mind. It is either there or it is not. It is a manner of doing things. And a very tempting one at tbat. Hence the desire to discover "how it's done" and show off to your friends. So there arises the need for systematization. But sucb a system means triteness, for triteness is a commonly available substitute for thinking.

Wit is not creation. It is a method of writing, painting or drawing. It is a kind of individual perception of the world. We do not confuse Bernard Shaw with Gogol—not because they lived in different epochs, but because they used the same method differently. True masters of satire always strive to understand the nature of buman relations and not merely to make people laugh. So, when building your computer, you had better teach it first to understand the drama of human relations, teach it to understand human joy and human sorrow.

I hope to live to see that fine day when your machine will replace Mark Twain. I am afraid the contraption will be beyond my understanding and I will not be able to appreciate its wit.

Humour and the microscope

by Anatoli Dneprov, M.Sc. (Physics and Mathematics), writer of science-fiction

Leonid Likhodeyev's objections, however witty, resemble those of Ivan Pavlov's opponents who claimed that his experiments with light and sound signals would not furnish any new information on the higher nervous activity of animals.

The satirist insists that wit is only a method and not a form of creative activity. How about poetry? Is that a method too?

Any new area of research begins with classification. That is how it was with the theory of evolution, atomic theory and, evidently, all sciences. Even an amateur collector who classifies coat buttons or postage stamps, is trying to trace the general principles by whicb he should add new specimens to his collection. In short, classification is a way of finding general laws.

Classification of funny or sad things is a complicated business. The "compartments" into which Alexander Luk has divided wit are not enough, though I cannot offer anything more comprehensive. But the number of compartments is hardly the point. What is really important is a theoretical question: is it possible to draw up a full list of devices which may help to coin witticisms? I am sure it is not.

Only too recently poets knew a set number of poetic forms. But since Vladimir Mayakovsky wrote his poems so many more ways of writing poetry have emerged that experts now bave to consider free verse, which cannot be fitted into classical forms. Humour does not mark time either.

Likhodeyev need not be afraid of a machine that will some day simulate wit just as approximately as a mechanical mouse simulates the behaviour of a living animal. As for classification of humour, it is essential to pose the problem and try to find at least an approximate solution to it.

We must start in the simplest way. The road to the comprehension of the nature of humour, as I see it, starts from psychophysiology, rather than from literature. The problem of wit has to be tackled jointly by psychologists, cyberneticians, biophysicists, neurophysiologists—and, naturally, bumorists.

NEW HOUSES FOR THE ARCTIC DWELLERS

from Komsomolskaya Pravda

Tundra dwellers of the Soviet Arctic North could only dream of green gardens and orchards. By designing buildings with regulated self-contained climates, engineers and architects of the *Pechorproekt* Institute are making the dream come true. The first three such buildings—a Young Pioneers' Palace, a garden-nursery school, and a school, to be constructed in the town of Vorkuta—will have swimming pools and other sports facilities, winter gardens, artificial sunlight and temperature control.

The Pioneers' Palace, with swimming pool and gym, will have spacious halls and auditoriums, library, reading rooms, modern laboratories for would-be experts in radio and TV, electronics, cybernetics, film-making and photography, and rooms for painting, modelling, singing and ballet classes.

In the nursery school, there will be special lighting to make up for insufficient ultraviolet radiation in winter. Lemon, orange and palm trees will grow in the winter garden. Fruit trees, flowers and vegetables will also be grown under a special glass dome about 15 feet high on top of the building. This additional storey can also house school laboratories, recreation rooms and dormitories.

CYBERNEWS

A cybernetic model of concentration has been designed by Professor D. Gedevanishvili and engineer G. Eidelman at the Georgian Academy of Sciences. The model possesses all the characteristics of the orientation reflex: it reacts to light, sound and other effects. It even reproduces the "flashes" of electric rhythms which arise in the brain when man or an animal concentrates on something.

The model can be employed in analysing the functioning of the brain as well as during surgery under anaesthesia or hypothermia. It will also be of use in developing cybersystems possessing some of the properties of higher organisms.

from Uchitelskaya Gazeta
(Teachers' Newspaper)

O Sun, thou wrathful flame!
Heinrich HEINE

THE SUN—KILLER No. 1?

by Lev Bobrov

from his book,
Sensational Theories Investigated

[illegible] symbol of good and evil of the life-giving and death-dealing properties combined in our diurnal star.

"Sunspots are anticipated on March 9, 1934. They are expected to be of high intensity. Please report if there is an unusual number of complications in cases of acute or chronic diseases: attacks of bronchial asthma, angina pectoris; pains in the joints, liver or kidneys; cases of sudden death."

Above is a bulletin circulated at the time to bospitals and clinics by the Medical Service of the Sun.

One of the founders of this unusual service was Alexander Chizhevsky. In 1915 he published a paper "The Sun's Periodic Influence on the Earth's Biospbere", in which he drew a remarkable parallel between physical processes in outer space and phenomena in living nature, specifically, human society. Later he tried to establisb a relationship between the regular appearance of spots on the sun and outbreaks of epidemics and aggravation of nervous and cardiovascular diseases.

For a long time his research met with scepticism. Nevertheless, the coincidence noted by Chizhevsky and other pioneers in this field remained a fact. An unaccountable but stubborn fact which could not be ignored by scientists.

By the 1930s, the French researchers M. Faure, G. Sardou and J. Vallot had collected a vast amount of statistical evidence proving that in 84 per cent of the cases the passage of sunspots across the sun's central meridian coincided with sudden deaths and exacerbations of chronic diseases. They established an international institute for the study of solar, terrestrial and cosmic radiation. Chizhevsky was on the board of the Institute from 1931 to 1940.

In the early 1930s, P. I. Kurkin, a Soviet physician, published his findings after years of inquiry into cardial diseases and cerebral haemorrhages. Analysis revealed that these diseases occurred most frequently when the sun was densely covered with spots. The facts were many, but the connection was elusive.

Passions were running high. In heated polemics Professor Chizhevsky's opponents almost went so far as to call him a charlatan—a man whose ideas had won numerous supporters in different countries and attracted the attention of world authorities such as Svante Arrhenius, Giorgio Piccardi and Helmuth Berg, and who had been elected honorary president of the 1st International Congress on Biopbysics and Cosmobiology in New York.

Early in 1965, a commission was set up by the Academy of Sciences to assess Chizhevsky's contribution to science. The commission, headed by Professor B. M. Kedrov, came to the conclusion that many of his works and his ideas were of considerable scientific value.

Was Mesmer Right?

On August 11, 1784, a commission appointed hy Louis XVI to inquire into the suspicious experiments of Franz Mesmer, denounced him as an imposter. The report stated that magnetism was heyond perception by any of our senses, and had had no effect either on the members of the commission, or on the patients on whom it was tried out.

But the effect of magnetism on the nervous system has since been demonstrated by various researchers, among them Soviet physicians Professor M. Mogendovich and his assistant R. Skachedub, who during the Second World War used magnets to relieve the suffering of wounded soldiers, attributing the alleviating effect of the magnetic field to its depressant action on the nervous system.

In recent years, Soviet scientists have found that when magnetic disturbances are especially strong, mortality from infarction is 11 to 16 times higher. During a magnetic storm in 1961, which lasted for more than a week, two infarctions were recorded daily in the Urals city of Sverdlovsk.

There are masses of statistics to show that geomagnetic storms are accompanied by outbreaks of cerebro-spinal meningitis, eclampsia (convulsions), and the aggravation of cardiovascular and other diseases.

The French eighteenth century commission was none the less correct when it said that magnetism was not perceived hy any of our senses. In fact, we do not notice

at all tbat the Earth itself is a great magnet.

All the same, numerous experiments have proved that a magnetic field has an effect on a living organism. Perhaps it is sensed directly by the cells of our bodies or by our nervous systems. After all, if magnetic interference can play havoc with a missile guidance system or an industrial automaton and actually lead to breakdowns, why sbould it not knock out whole sets of components of the sophisticated cybernetic machine known as the human system? A. S. Presman, a Soviet biologist, believes tbat since a sick person's controls are out of gear, which impairs his powers of adaptation to environment, he is more sensitive to magnetic storms than a healthy person.

According to Chizbevsky, the damage is done by bioactive solar rays rather than geomagnetic storms. Is there any connection, incidentally, between sunspots and geomagnetic storms?

Beware 1969

Galileo discovered sunspots in the early seventeenth century. It was later established that their number varies periodically. The presence of a great number is an indication that the sun is entering its active phase. It develops whorls where the magnetic field is hundreds of times more powerful than in tbe surrounding area, and thousands of times stronger than on Earth.

These fiery vortices spurt jets of charged particles. Giant clouds of ionized gas reach the Earth's atmosphere and saturate it with electrons and protons. Most particles are enmeshed in the magnetic web, fail to reach the Earth and remain caught in the Earth's radiation belts. Tbese are the cascades of solar cosmic rays that generally upset the geomagnetic field. If diseases tend to rage during magnetic storms on Earth, they are nearly always preceded by the appearance of spots and flares on the raging Sun.

Tbe Soviet scientist N. A. Shultz analysed statistics from the USSR, Britain, France, Italy, Belgium and other countries and discovered that the increasing frequency of flares on the Sun and the appearance of powerful solar prominences almost invariably led to characteristic cbanges in the properties of the blood, a reduction in the number of leucocytes and an increase in the number of lymphocytes.

Chizhevsky used these and other results to back up his hypothesis that the Sun acted on living organisms directly, not through changes in the magnetic field or other intermediary factors. He asserted that a component of solar radiation, which he named penetrating Z radiation, from time to time tended to gain in intensity and have a lethal effect on weak, old, worn-out organisms. Those suffering from serious disorders of the nervous system went first; then came cardiovascular cases, and only then people with other illnesses. Chizhevsky wrote in a Paris magazine in 1928 that his study of 45,000 cases had led him to believe that the nervous system was the first to react to solar disturbances.

Soviet scientists are not unanimous about Chizhevsky's theory. Some are inclined to believe that it is the magnetic storms, but not the Sun, that affect the sick; others reject the very idea that the Sun could increase the death rate, directly or indirectly. The debate goes on, but conclusive answers will eventually be provided by research now being conducted in the USSR and other countries.

Whatever the answers, hardly anyone will now dispute the fact that sunspots are a danger signal. Happily, they put in a massive appearance only at 11-year intervals. The last occurrence was in 1958, and the next will be in 1969.

Special services have been set up in many Soviet cities to keep doctors informed of forthcoming solar flares and magnetic storms.

Seventy countries, including the Soviet Union, cooperated under the International Quiet Sun Year programme (1964-1965), effectively using rockets, satellites and other such means whicb offer new possibilities to heliobiology. A comparison of the IQSY results with those to be obtained in active Sun years will help to establish the truth.

Information furnished by the Soviet interplanetary station, Venus-4, showed that the intensity of cosmic rays generated by solar flares in 1967 was bundreds of times greater than during the IQSY. An even greater increase is expected in 1969. Doctors will have to be on their toes.

A WHOLE WORLD BY TOUCH

by Alexander Meshcheryakov
head of the laboratory
studying blindness, deafness and dumbness
at the Moscow Defectology Institute

and Olga Skorokhodova

Courtesy of Radio Moscow

It is pointless to speak to a deaf, dumb and blind child—he hears nothing. He can say nothing and does not even realize that human beings communicate through speech. Finally, you cannot show him anything, for he is blind.

One scientist, horrified by such a brutal experiment of nature, exclaimed: "They are something in between animal and vegetable!"

An Empty Safe

For many years doctors and teachers all over the world have been trying to solve the problem of educating the blind, deaf and dumb. The endeavours of Dr. Samuel Gridley Howe, an American, went down in history as the first successful attempt of this kind. In his *American Notes* Dickens mentioned Laura Bridgman, a blind, deaf and dumb girl for whom Dr. Howe opened the door into the world of normal human beings in 1837.

His achievements inspired the American dramatist, William Gibson, to write *The Miracle Worker,* which has been running for many years in theatres all over the world. In Moscow the play has been staged by the Yermolova Theatre.

Without going into detail, I just want to deal with two points in the play.

First, the title contains the word "miracle". The idea that it is impossible to teach blind, deaf and dumb children was so common that success was considered in the nature of a miracle—a miraculous meeting between a genius of a teacher and an extraordinarily gifted pupil.

Secondly, in Act I, Dr. Anagnos compares the mind of a blind, deaf and dumb child to a safe. The right key will unlock its treasures. The key, it develops in the course of the action, is the *word.* The soul of the blind, deaf and dumb girl awakens at the moment when with great difficulty she utters the word w-a-t-e-r in the closing scene.

As I see it, the problem of teaching the blind, deaf and dumb is not one of finding the key to the safe and releasing the treasures within. There is no treasure. The safe is empty.

That is the tragedy of blind-deaf-mutes. Since childhood they have been deprived of three vital sense organs. They are walled off from society and the whole wealth of the world, and no amount of effort on their part will create any means of communication with others. The most profound solitude in the world prevents the development of their intellect.

Personally, I have no objection to the image of the safe. I think it clear and simple. But our job is to fill the safe with all the riches of the human intellect.

It requires special training to lead the blind, deaf and dumb child out of his state of mental degeneration. As to the key, I think it is not the word, not in the beginning at least. The first stage, the most important, was called by my teacher, Professor Ivan Sokolyansky (who died in 1960), the period of initial humanization.

In the remote dawn of Mankind, the invention and use of tools first helped Man to emerge from the animal kingdom. Other civilizing factors followed. The initial stage of educating a blind, deaf and dumb child is precisely the same process of humanization.

The child, whom the instructor practically never leaves alone for a minute, learns the elementary habits of everyday life—using a spoon, cup and plate, washing and dressing. Normal children undergo the same process, but they can imitate what they see, and react to signals they hear.

In working with blind, deaf and dumb children I bave arrived at the conclusion that not a single human ability develops spontaneously. Every operation, however simple, has to be split into elementary movements and each taught separately. Then when a child has developed at least half these habits, he becomes a real human being in his behaviour and intellect.

The means of communication, like the need for them, develop as habits of human behaviour are formed. The initial methods of communication are gestures designating things and wants. Communication with a blind, deaf and dumb child is practically impossible without gesture speech.

Plasticine modelling is one of the most important elements at this stage of training. The child communicates to others his images of the surrounding world.

Gestures mastered, the child develops an urge to communicate. Gradually we replace his primitive gestures by dactylic words, which is a more advanced form of communication. Deaf and dumb people talk with the help of their fingers. Our children do the same, except that they do not see these gesture-words and do not know that we sighted people see them.

This is how it is done. I take my pupil by the hand (not by the sboulder and I never tap him on the back—these children get accustomed to a single type of signal) and he understands that I want to speak to him. He feels for my palm and, by touching it with his fingers in different sequences composes words. I reply in the same way. If I used sound words simultaneously, you would see that the dactylic "talk" is only sligbtly slower than ordinary speech.

Day after day, month after month the child builds up his active vocabulary of abstract gesture-words. Concrete gestures, being less convenient, eventually drop out of use. The children get accustomed to talking to each other without the teacher's help. Then they are taught written speecb based on the raised Braille alphabet.

Mastering written speech is an extremely important stage in the mind-building of the blind, deaf and dumb child, who for the first time has the opportunity to record his thoughts, re-examine and clarify them.

Alexander Meshcheryakov, the author of the article, talks with two of his pupils. On the wall is an ordinary fan, which in this school takes the place of a bell.

Seryozha Sirotkin has a bent for engineering, and reads blueprints with his fingers. He has designed a machine to help blind deaf-mutes to study, and is constantly making improvements to it.

When the child has gradually mastered verbal speech in its dactylic and written forms, we proceed to teaching bim oral, sound speech. Children with unaffected larynxes and tongues can, in principle, master sound speech. They do not quite sense the timbre and pitch of their voices, but it is easy to understand them.

It is important that the children overcome this muteness, but what is even more important, the surrounding world, instead of being empty, becomes filled with objects. The children have images of these objects, they know their purpose and know how to deal with them.

When the children have mastered a language which covers their entire known image world we go over to normal (as regards content) school teaching. We teach history, geography, natural history and literature to the extent laid down by the Ministry of Public Education for normal schools. Only the teaching methods are special —they have been worked out by the laboratory studying deafness, blindness and dumbness at the Defectology Institute.

Of course, the child remains defective. His blindness, deafness and dumbness are the after-effects of serious afflictions of the central nervous system. But if the disease has not spread to the cortex, any degree of intellectual development may be reached.

In 1923, Professor Ivan Sokolyansky opened a special school for the blind, deaf and dumb in Kharkov. The graduates of that school reached the intellectual level of normal human beings.

The intellectual potentialities of most blind, deaf and dumb children are not inferior to those of children who see and hear. That was the opinion of Professor Sokolyansky and it has been fully justified. In fact, some not only do better at school than normal children but get higher honours than their fellows when they go on to further education.

Such a person, for example, is Olga Skorokhodova, now the possessor of a doctor's degree in education and a research worker at the Defectology Institute.

Olga was born in 1914 into a poor peasant family in the village of Belozyorka in the Ukraine. At the age of five she contracted meningitis and as a consequence went blind and deaf. Shortly afterwards, she lost the ability to speak.

In the autumn of 1922, orphaned, Olga was sent to the Odessa School for Blind Children. In 1925 she started at Professor Sokolyansky's school in Kharkov.

In the introduction to Olga Skorokhodova's book, How I Perceive and Imagine the Surrounding World, *Professor Sokolyansky wrote:*

"Paradoxically, it is much more complicated to teach those who have lost their hearing and sight than those who were born deaf and blind. It took us, and Olga herself, 17 years of painstaking work to make her what she is today."

Overleaf are some extracts from Olga Skorokhodova's book.

My Schooling

My childhood was such that I learned to work early and developed great perseverance. I followed with my hands all that people around me were doing. I gave them my hands so that they would show me how to hold a knife or a cake of soap. Very early I began to sew, to knit by hand and on a machine, to crochet, do basket work and make brushes.

But when I learned to read, I would go off by myself with a book and read for hours on end, forgetting about everything else. Sometimes I did not go to bed until I had finished my book. When I was reading *The Children of Captain Grant,* I even took the book to my physics lessons. During German lessons, while the teacher looked through her book for seeing people, I would furtively draw closer a hook of Pushkin's poems. I spent all my free time reading.

Professor Sokolyansky himself took the trouble to Braille-type for me a popular textbook on historical and dialectical materialism. I made extensive notes as I read the *History of Natural Sciences* and several books on psychology and physiology. I took an incomplete course in biology.

I read Dumas, Shakespeare, Schiller and other world classics. Among the Russian poets, Pushkin and Lermontov remain my favourites.

I know Ukrainian, though I studied in Russian. The reading of Ukrainian prose and poetry helped me to learn the language. I read the works of Taras Shevchenko, Ivan Franko, Mikhailo Kotsyubinsky and other Ukrainian prose-writers and poets.

How I Look After Myself

I have been living alone and looking after myself for a long time. I avoid using people's help when I can do something myself. I need household help only when I am doing intensive mental work, in which case everyday cares create an added strain.

Though my eyes are open I see no light at all, so I cannot tell darkness from light. But I have a watch with raised figures so I know when it is morning and when it is evening without asking. I know where everything is in my room so I can always find what I want without difficulty. I can just as easily tidy up my room and put things in their proper place.

I can sense only smells and the feel of a trembling saucepan when something is boiling in it. I learned to know when water or milk is boiling by the steam and the rattle of the saucepan. It is easy to tell when soup or porridge is boiling by the smell. From practice and the senses of touch, smell and taste, I have learned to cook my own food without trouble.

Once in summer I went for a vacation. At the station in Kharkov I missed the person who was supposed to have met me. A fellow-passenger saw me to the local polyclinic and left me in the reception room. I felt people walk past me. But how could I communicate with them, when I could not see them? I took a few steps to where I felt a smell coming from another room. I stopped to feel if there really was a door leading to another room. By the smell and the movement of air I realized that I was right. I entered and asked: "Excuse me, is there a telephone here?" A man came up to me and took me by the hand. He must have told me something. I asked him to write on my hand. The man wrote that there was a telephone and that he would do the phoning for me.

Olfactory and tactile sensations helped me to find a way out of the difficult situation.

What the Sense of Touch Means to Me

Once I was so engrossed in typing that I did not sense X. approach me. Only when the moving air touched my cheek did I start in fright.

When L. H. shakes my hand I can always tell if she is upset or unhappy about something.

To me, hands partially replace vision and hearing. But my feet also play an important role. I can feel the slightest slope of the ground when I walk along a street or through a park. When I first entered my room after it had undergone major repairs, I immediately felt that the floor had developed a slight slant.

Books for seeing people are read to me by the method of dactylology. It is most important that the reader should have agile fingers not tired by other work. If my readers miss a letter, or perform needless movements, I have to strain and grip their

fingers harder. After an hour of such reading my head and hand refuse to take in what is being read.

I perceive knocking or noise as easily as smells. All these movements are communicated to me through the vibrations of the floor.

Once L.H. and C. were talking in my presence. I had "heard" L.H.'s voice many times and found it pleasant. But I had never "heard" C.'s voice. I put my hand on the throat of L.H., then on that of C. and felt that C.'s voice was a little lower than L.H.'s and had a pleasant timbre. N., who has a good ear for music, told me that C.'s voice was in fact somewhat lower than L.H.'s, but that because of a tremendous difference in timbre it was difficult to realize this immediately.

I often put my hand on my throat when I speak to people. By feeling my voice I can pitch it more or less low or high, make it loud or quiet, hard or soft.

If I do not know how far away the person I am talking with is standing, I feel that I speak unnaturally—I raise and strain my voice. I am especially nervous when I have to speak to an audience. But if a close friend stands by, holding my hand, it calms me.

I can feel the sounds of music not only when I hold my hand on top of a piano but also through the vibrations communicated to my feet, especially if the player picks out powerful chords.

Some people ask if I can differentiate colours tactually. Of course I cannot. But since I use the language

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HOW I PERCEIVE AND IMAGINE THE SURROUNDING WORLD

of seeing people I use common words to describe colours and hues.

I am very eager to imagine colours and when I was much younger I often pestered my friends by asking them to explain to me what the different colours look like. Once I had a woollen dress made for me and I was told that it was the colour of coffee with milk. Of course I imagined a cup of hot coffee with milk and its smell and taste, but certainly not its colour.

How I Recognize People

People with normal senses see the faces and hear the voices of others and remember them. For me, identifying people is more complex. When I shake hands, I must remember not only skin distinctions such as smoothness, roughness, warmth or moistness, but also the shape of the hand.

Every person, you will agree, has his own handshake. Some people shake your hand with vigour and energy, other people's handshakes are flabby and indifferent, while those of others are soft and delicate. When I take leave of a new acquaintance I try to memorize and create a mental picture of his hand down to the minutest detail. I try to remember, for instance, how the person takes me by the hand—abruptly, gently, quickly or slowly—in order to write on my palm with his finger, how he moves his finger, how he draws letters, how the tremors of his hand vary according to what we are talking about, how he withdraws his hand.

Without such a detailed study and without trying to build pictures of my friends I would be unable to recognize them immediately by the shape of their hands and the feel of their skin.

Most people can identify others not only by their appearance but also by their voice and tread. I, too, can sometimes feel from a distance people whom I know well because I have thoroughly studied their movements. I recognize them even when they are outside the door of my room.

Cinemas and Galleries

I sometimes go to the cinema. During the film my "interpreter" hurriedly tells me all he is seeing on the screen. Haste makes him slur, so my attention is concentrated on perceiving the words while my mind works too slowly to draw pictures of the characters, the situation and the settings. The difficulties increase when I have to be told about things I have never "examined" with my hands—such as mountains, seas, deserts and unfamiliar animals. If the story of a film is told to me at home, the narrator is in no hurry and can repeat several times what I have not grasped or have failed to imagine sufficiently clearly.

When I visit art galleries and my companion describes a picture I do not always imagine the picture as it is. If it depicts, say, a sunrise, a sunset or a roaring sea with a sinking ship, I build separate pictures of the perfectly smooth surface of the picture, the sun and the sea. I perceive them as I would in natural conditions, the sun warming me and the sea lapping at my feet, splashing me all over like a cascade. I even recall the smell of the sea.

When I leave the museum I can remember the pictures and my inner eye sees glass if it was glass-covered and the frame—either smooth or carved, but not the painting itself. I remember only the contents, the meaning of the description. But since I use the language of seeing and hearing people the person who listens to my description can hardly believe I have never seen the picture with my own eyes.

People who cannot hear or speak understand sculpture and painting better than other arts. What is left to those who cannot see? Naturally, poetry and sculpture.

Long before I began to visit museums I had been "shown" the sculptures which stood in our institute. The wonderful marble statues of two Venuses (the Medici and Milo), a resting Hermes, wrestlers of Florence and other figures fired a love for sculpture in me.

I was "shown" a bust of Beethoven. I had never "seen" his firm, courageous, expressive face but I had already read a biography of the great composer. I knew that he gradually lost his hearing and wrote his best symphonies when he was deaf and lonely. I was immersed in recollections when I realized that all the while my hands had been lying on Beethoven's head. Suddenly I felt what seemed like an electric current pass through my fingers. That surprised me but soon I realized the reason. I had "heard" several times, as I held my hands on the piano, Beethoven's Moonlight Sonata. The strong impression made on fingers reproduced the vibrations that had once been communicated to them.

I was shown a sculptural portrait of an old woman holding a stocking she had not finished knitting, and a boy sitting at her feet. His face was slightly lifted and his eyes wide open. . . . Obviously, the little boy was all ears. I recognized him by his lips: the little Pushkin to the fairy-tales of Arina Rodionovna, his nurse.

The moment we fall in love with art, drink in its harmony and beauty, all that is wonderful and wise inspires us, arousing feelings we never experience amid the drabness of life.

Though I perceive the world only through touch and smell, all these feelings are within my reach. But the deaf and dumb who can see are in a far better position, having within their grasp the whole wealth of visual impressions. Regrettably, most of them make such poor use of their advantage over me. I do not know if there are any painters among the deaf and dumb but there are two sculptors, Nechayev and Borisanov. Surely not enough.

* * * * *

Speak about things that are clear to you, otherwise keep quiet.

There's no harm in being praised for what you have done. What's bad is to do things in order to win praise.

Stop talking immediately you feel you are getting irritated.

Leo Tolstoi

Linocut: Flying Birds.

Vladimir Favorsky with his grand-daughter.

FAVORSKY

by Andrei Chegodayev
from the magazine Iskusstvo *(Art)*

THE WORLD OF ARTISTIC IMAGES CREATED BY VLADIMIR FAVORSKY (1886-1964) HAS UNUSUAL BREADTH, DEPTH AND VARIETY, AND HE IS REGARDED AS ONE OF THE SOVIET UNION'S MOST OUTSTANDING ARTISTS.

THOSE WHO KNEW FAVORSKY THE MAN ADMIRED HIM EVEN MORE THAN THOSE WHO KNEW HIM ONLY AS AN ARTIST. THROUGHOUT HIS LIFE HE WAS AN EXAMPLE OF COURAGE AS WORTHY OF PRAISE AS HIS ARTISTIC GENIUS.

Favorsky's world is striking above all for its breadth. He was a graphic artist who illustrated the world classics with great intelligence and understanding, a stage designer, a pioneer in applied art, a superb draughtsman and water-colourist, and an art historian with original views.

Whatever Favorsky did, his approach was extremely serious and responsible, for to him all work was of equal importance. Whatever he happened to be working on at a particular time of a particular day enjoyed his keen and whole-hearted attention, whether it was a cycle of huge mosaics, a trademark for a reel of cotton, a frontispiece for "Hamlet" or a decoration for a plate—perhaps a shepherdess and her flock.

Forty or so years ago Favorsky did a cover design for the magazine *Makovets,* which was published by an artistic society of the same name to which friends of Favorsky belonged; the society's other name was "Art is Life", and I feel that this formula can be aptly applied to Favorsky's work. He was completely wrapped up in his art, and thought of nothing else. He had his finger on tbe pulse of the

Fyodor Dostoevsky. Wood engraving.

Frontispiece for Act III of A. Globa's tragedy "Famar" (one of Favorsky's early works).

Headpiece for Act III for Shakespeare's "Hamlet"

time, and that was why he was one of the greatest Soviet artists. He always remained true to himself, had tremendous integrity in both thought and feeling, and this was reflected with clarity in his work, in everything he did.

Here, for instance, is a characteristic picture of Favorsky at the beginning of the thirties. He sits with a mass of work at a long table by the solitary window in a small poorly-lit crowded room facing the courtyard of the old building of the School of Painting,

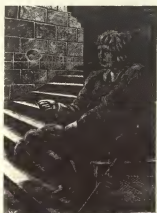
Dust cover for Samuel Marshak's translation of Shakespeare's Sonnets.

Sculpture and Architecture in Moscow.

On the opposite side of the table, similarly engaged in engraving, is Mikhail Pikov, who also lives here. On a trestle bed by the door leading into the corridor sits Nikita, Favorsky's son, planing away at a block of wood destined for a sculpture, and shavings are flying all over the room, even onto his father's table.

Suddenly, from some remote part of the flat comes the voice of Istomin, another artist: "Nikita, the water in the kettle's boiling away!" And Nikita flies out. Favorsky stares silently in faint astonishment over the tops of his glasses at the point where Nikita was last seen and then exclaims: "Impetuous youth!"

Favorsky was already an eminent artist, yet he saw nothing incongruous in living and working in such unsuitable conditions, and spending only the week-ends in Zagorsk, near Moscow, where his family lived. Thirty years later things were more or less the same. He had a large studio, but as before, he sat in the farthest corner, and had to push aside piles of paper to free a place on the table in order to display his latest engravings. All the space in the large high-ceilinged room was occupied by enormous lumps of marble on which two sculptors living in the same house were working. One could not say they were simply noisy; they were



Hamlet

Pushkin as a schoolboy. Pencil drawing on paper.

Right: Illustration to Pushkin's "The Stone Guest".

thunderously, crashingly noisy. This time stone chips were flying about the entire studio, and Favorsky paid not the slightest attention to any of this but went on calmly explaining the ideas behind his latest series of illustrations.

He received the news of the deaths of both his sons during the war with the utmost restraint and outward calm. He considered it their justified sacrifice for the common cause. His wife was hit very hard, and became an invalid, afraid to let her husband out of her sight. For years he hardly left her bedside, trying to infuse her with at least a tiny spark of vital energy. But those who only knew Favorsky from his work could have no suspicion of sucb a family tragedy in the background. In his engravings for "The Lay of Igor's Host" (1950) or for Pushkin's "Boris Godunov" tragedy is conveyed at such a level that it becomes the tragedy of mankind in general, and Favorsky's personal feelings become submerged in the general.

The majority of his more important works have a magnificently monumental yet profoundly buman heroic quality. This is certainly true of his book illustrations—his wood engravings for "The Book of Ruth", for Merimé's stories, for Dante's "New Life", Sbakespeare's "Hamlet", the poems of Burns, Balzac's "Berezina", and Pushkin's "Little Tragedies", just as of his engravings for the works previously mentioned—"The Lay of

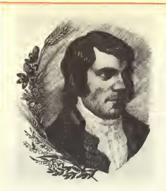
Igo's Host" and "Boris Godunov". It is true of the engraved portraits of Dostoevsky, the young Goethe, and his pencil portrait of Pushkin as a schoolboy.

A whole world of complex, powerful characters evoked with psycbological depth and subtlety, a wbole world of wonderful poetic images overflowing with dramatic or lyrical feeling, is represented in these multifarious works of Favorsky's, which are concerned with various epochs and nations.

These images of the past reveal a magnificent and humanistic continuity of time, witb the utmost simplicity tbey form a bridge to images of our own time—for instance, to the mosaic "1905", the engravings "Years of Revolution", to a beautiful allegorical image of man giving his own fiery heart for the people.

But from this main epic, heroic current in his work, which brought him close to Petrov-Vodkin and Deineka, Favorsky was able to switcb simply and easily to quite different themes and images, some elegantly lyrical, some humorous and mischievous, and some with a humdrum, everyday air. He first began to produce his characteristically tranquil oil-paintings of nature before the Revolution, and of tbese landscapes with their meadows and groves he was to say in later years: "That encounter with Nature was an honest one." All his subsequent "encounters with Nature" were just as honest.

Illustrations to the twelfth century Russian epic, "The Lay of Igor's Host". Wood engraving.



Portrait of Robert Burns—
frontispiece for Marshak's translations.

Favorsky's Nature always had its pristine purity and clarity, its strict spatial relationships and scrupulously conveyed subtle effects of atmosphere and light.

He was also given to wit, ingenious humour, sudden amusing flights of fancy—on the surface quite out of keeping in such a wise and learned man who made a habit of exploring the human soul and analysing the development of human passions.

Favorsky, until then unknown, won fame for his series of engravings for Anatole France's "Les Opinions de Jerome Coignard", in 1918. This series also marked the beginning of a rapid development of Soviet wood engraving along highly original and brilliant lines. It was the first experiment in designing a book as a whole, with illustrations and general appearance in keeping with the content and stylistic qualities of the literary work.

He did not develop his experiment on second-class works, but built up his expertise in the course of work on literary classics—the story of Ruth, Pushkin's "The Cottage in Kolomna", and so on.

It is interesting to note that apart from one or two cases (for example, "Othello") Favorsky had no failures in his illustrations for great literary works.

Illustration to Burns's poems. Wood engraving.

Among the most brilliant of Favorsky's stage designs were those for Shakespeare's "Twelfth Night". The decor was amusing, infinitely ingenious and inventive, full of life, and with genuine Shakespearean power. It was only in name that his role was that of artist. In fact he controlled the entire production, subjugating by his charm not only the director but all the performers in this strikingly integral, bold and sparkling spectacle.

When he went out with the actors to take a bow at the end of the performance in response to the loud and continuing applause—a tall, upright figure, with a greying beard and wearing a rather informal black windcheater, his eyes screwed up against the bright lights—he gave the impression of some old wizard whose sorcery had summoned up from nowhere this brilliant, joyful and gay world shimmering with all colours of the rainbow. Not only the audience got this impression, but the actors too.

I felt that in Favorsky's purity of spirit there was always something a little childlike, a child's delight in the mysterious wealth and beauty of the universe, just as much ever-fresh enthusiasm for the unlimited possibilities of creative invention, just as much natural and innate nobility.

Favorsky on himself and his work

In my youth I loved and admired the early Renaissance artists: Giotto, Masaccio, Niccolo Pisano, and I studied them like an art historian, travelling to Italy to do so. Later, when I discovered early Russian painting I considered that this was the most interesting of all to me. It was the direct continuation of the great art of Greece, yet at the same time had profoundly national Russian features.

* * *

When I was young I studied painting, and I was a promising pupil. I might even have become a good painter, perhaps, but I preferred graphic art. I did so because it was more within reach of the people, more of a mass art.

Paintings can only be seen by visitors to museums and art galleries. The graphic artist can enter every home, through book illustrations and prints—taken by himself from his own original. Understandably enough, during a time of revolution, when the mass of the people are in a state of awakening and upsurge, and there is a constant growth of interest in art, the graphic artist has a big role to play.

* * *

However strange it may seem, a good literary work is easier to illustrate than a poor one. On the one hand it uplifts the artist, and on the other, it sets him difficult tasks.

Shakespeare, of course, is good to illustrate. It is typical of him that all his works convey action.

Action is his language. Furthermore, his characters are complex—flesh-and-blood people, not primitive representatives of evil or primitive doers of good.

In his sonnets and tragedies Shakespeare touches on all aspects of morality, and one can say that to him nothing human is alien.

Many illustrators have turned to Shakespeare, and it is impossible to pick out the most outstanding of them. What I should like to see is an edition of Shakespeare containing all the illustrations done by Moscow artists.

LENIN IN LONDON

The British Museum Reading Room, an Irish speaker in Hyde Park, rides through the city on the tops of buses—these were some of the things Lenin liked about London on his first visit there in 1902-03. "The immensity of London staggered us. Although the weather was filthy the day we arrived, Vladimir Ilyich* brightened up at once and began to look around this citadel of capitalism with curiosity . . ."

Thus Lenin's wife, Nadezhda Krupskaya, records their arrival in April 1902. *Iskra*, the illegal Russian Marxist paper, of which Lenin was editor, had been transferred to London from Munich, where further publication had become impossible.

Both Lenin and Krupskaya had studied English previously, and while in exile in Siberia had even translated the Webbs' massive work on British trade unionism into Russian. Their theoretical knowledge, however, proved streets ahead of their spoken English, and they were horrified to discover that they understood nobody, and nobody understood them, once they were there.

While the comical situations it got them into amused Lenin, he decided that the language had to be tackled seriously. Teachers were advertised for, and they started going to all sorts of meetings.

"We went fairly often to Hyde Park at the beginning," Krupskaya recalls. "Speakers there harangued the crowds on all kinds of subjects. One man—an atheist—tried to prove to a group of curious listeners that there was no God. We particularly liked one such speaker—he had an Irish accent, which we were better able to understand. Next to him a Salvation Army man was shouting out appeals to Almighty God, while a little way off a salesman was holding forth about the drudgery of shop assistants in the big stores."

Lenin also enjoyed listening to after-service lectures and debates held at some working-class chapels, and once or twice he and Krupskaya visited a socialist church—Seven Sisters—at which they heard the congregation sing a hymn "Lead us, O Lord, from the Kingdom of Capitalism into the Kingdom of Socialism".

He himself gave many lectures

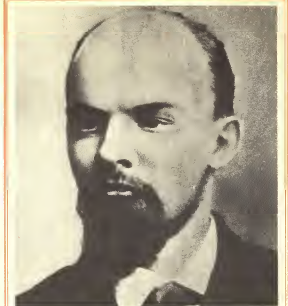
**Vladimir Ilyich—Lenin's first name and patronymic.*

The house in Percy Circus where Lenin stayed in 1905 during the Third Congress of the Russian Social-Democratic Workers' Party.

Memorial plaque put up by the London County Council to commemorate Lenin's stay in the house in Percy Square.

while in London. On March 18, 1903, for example, he made an anniversary speech on the Paris Commune at a workers' meeting in Whitechapel.

Soon after their arrival. Lenin and Krupskaya moved into two rooms at 30 Holford Square, Finsbury, where they could cook for themselves and live more cheaply. "We found all those oxtails, skates fried in fat, and indigestible cakes were not made for Russian stomachs," Krupskaya elaborates.



Lenin, when he was between 35 and 37. The photograph is thought to have been taken during a visit to London between 1905 and 1907.

This bouse was partly destroyed by a bomb during the last war, and in March 1942, soon after the bombing, a plaque was placed on the wall: Here, in 1902-1903 lived the founder of the USSR

VLADIMIR ILYICH ULYANOV-LENIN

(1870-1924)

The Finsbury Borough Council erected a monument to Lenin which was unveiled on April 22, 1942. then, in 1951, on the redevelopment of Holford Square, the Lenin memorial and plaque were removed

to Finsbury Town Hall.

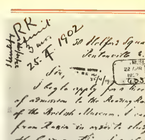
British Social Democrats, particularly Harry Quelch, editor of *Justice*, the organ of the Social-Democratic Federation, were of great assistance to Lenin in his work, and Quelch placed the offices and press where *Justice* was produced—now Marx House in Clerkenwell Green—at Lenin's disposal for the production of *Iskra*, which was smuggled into Russia.

Apart from his work on *Iskra*, Lenin was also involved in preparations for the Second Congress of the illegal Russian Social-Democratic Labour Party, in the writing of a pamphlet "To The Rural Poor", and in maintaining general contact with socialists in Russia.

"Correspondence with Russia," says Krupskaya, "frayed his nerves badly. Those weeks of waiting for answers to his letters, constantly expecting the whole thing to fall through [preparations for the Congress], that constant state of uncertainty and suspense, were anything but congenial to Vladimir Ilyich's character. His letters to Russia were full of requests to write punctually."

Secrecy from the czarist authorities was essential, and Lenin and his wife took the name of Richter while in London. An advantage, Krupskaya comments, "was that all foreigners look alike to English people, and our landlady took us for Germsns all the time we were there."

Security precautions in their correspondence with Russia were extremely primitive, sbe considers in retrospect. "All those letters about handkerchiefs (meaning passports), beer being brewed and warm fur (illegal literature) . . . the whole thing was so thin, so transparent" althougb, she added, "to a certain extent it had succeeded in throwing


25.4.1902

30 Holford Square
Pentonville W.C.

Sir,

I beg to apply for a ticket of admission to the Reading Room of the British Museum. I came from Russia in order to study the land question. I enclose the reference letter of Mr Mitchell.

Believe me, Sir, to be Yours faithfully
Jacob Richter

April 21 1902

To the Director of the British Museum.

When Lenin applied for a ticket to the reading room of the British Museum he used the name of Richter. Since for the sake of security he was posing as a German, he maintained the role in his letter of application, using the German "J" instead of the English "I".

the police off the track."

Among the visitors Lenin and Krupskaya had while in London were various Russian Social Democrats who had escaped from czarist prisons and then from Russia. One of them had broken out of the jail in Ekaterinoslav [now Dnieprope Trovsk], and had been helped across the border by high-school boys, who had dyed his hair. The boys, it seemed, were more devoted than skilled, and the poor man turned up in London with crimson hair.

A great deal of Lenin's time was spent at the British Museum. He did not care much for ordinary museums, and the only part of the British Museum that appealed to him was the Reading Room. As soon as he arrived in London, Lenin obtained a reference from J. H. Mithell, General Secretary of the General Federation of Trade Unions, and applied for a ticket.

He considered it the world's richest library, and later said: "When I am in London I always work at this library. It is a wonderful institution from which a great deal can be learned. This is particularly true of their remarkable reference department. You will be told in a very short time in what books you can find material on any question that interests you."

He was also highly impressed by the many reading rooms in London where people could go in to read newspapers, and in later years wanted to see similar rooms organised all over the Soviet Union.

London life was just as interesting to Lenin as the books at the British Museum. He enjoyed long bus rides through the city and liked to look at the busy traffic and the quiet elegant squares. "Once or twice," says Krupskaya, "we took a ride on the top of the bus to some working-class district on the evening of pay day. An endless row of stalls, each lit up by a flare, stretcbed along the pavement of a wide road; the pavements were packed with a noisy crowd of working men and women, wbo were buying all kinds of things and satisfying their hunger right there on the spot."

Another form of relaxation Lenin and Krupskaya enjoyed was rambles on the outskirts of London. Their favourite outing was to Primrose Hill. It was the cheapest trip—a sixpenny fare, there was a fine view of almost the whole of London, and it was near Highgate Cemetery, where Karl Marx was buried.

Just a year after his arrival Lenin had to leave London for Geneva, it having been decided to move the *Iskra* headquarters there. Lenin himself did not agree with the move but was in a minority of one when voting took place on the editorial board.

He was to visit London four more times after this—again in 1903, then in 1905 and 1907 for the Second, Third and Fifth Party Congresses. His final visit was in April-May 1908, when he made the journey specially to do research at the British Museum for his book *Materialism and Empirio-Criticism*.

Treasure Hidden in Chromosomes

by Anatoli Shwartz
from the magazine ZNAMYA

Professor Serebrovsky of the Moscow Animal Breeding Institute was no smuggler, but once it almost looked as if he were. Returning from Berlin in the autumn of 1927 he brought along a pair of rabbits. They looked like ordinary rabbits—nothing special about them. But there was a good reason for bringing them. In fact what the professor was taking home in the rabbit hutch was worth thousands of dollars. Yet he was doing this without violating a single customs regulation.

The story began on a French farm in late 1924. Among the thousands of rabbits on the farm there appeared some with unusually beautiful fur that looked like velvet. The new breed was named Rex for its regal beauty, and before long Rex fur became the fashion of the day. A single pelt cost 100 gold marks.

Professor Serebrovsky decided to import Rex rabbits into the Soviet Union without paying the fabulous price. He did so, not by smuggling or swindling, but by taking advantage of his knowledge of heredity. An outstanding geneticist, he was well aware that the two plain crosses he was taking home possessed the latent Rex gene which was bound to manifest itself in the second generation. He also knew that only one-third of the litter would be Rex and the rest just ordinary rabbits.

In 1865 Gregor Johann Mendel observed that if a yellow pea was crossed with a green pea only yellow peas would be produced in the first generation but in the second generation there would be both yellow and green peas, the number of yellow peas being always three times the number of green peas.

Serebrovsky's rabbits followed Mendel's law of heredity: the latent gene emerged from underground in the second generation and bestowed on the young the beautiful Rex fur.

The law of heredity contains more

Top, left *Even the standard brown mink comes expensive, but blue mink or any other not so usual shade is several times more so*

A fox may also be white if the geneticists so desire.

fantastic possibilities. Knowledge of the laws of genetics makes it possible to glance into the future and predict with great accuracy when and how certain ancestral characters will appear in coming generations. To foresee the consequences of heredity means a great deal but would it not be possible to intervene actively in heredity and influence it as desired?

In 1916 Professor Nikolai Koltsov, Alexander Serebrovsky's teacher, said he was sure the problem of changing species experimentally would be tackled and solved. He asserted that the most promising approach was on the basis of the mutation theory.

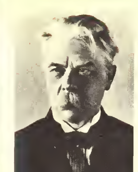
Fifty years ago there were few who believed in the possibility of influencing the cell's hereditary apparatus and upsetting the ancient system of the genes. But at a conference of the founders of the Moscow Institute of Experimental Biology, the young scientist outlined the main trend in modern genetics.

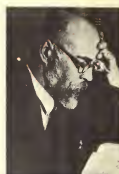
"A way must be found", he said, "to change the hereditary organization of the germ cells by giving them a strong 'shake-up' and then from among the different forms which originate, the best adapted to the environment must be selected and the favourable qualities obtained fixed by careful selection. I am convinced the time is not far off when it will be possible to create new forms of life."

The Institute of Experimental Biology was opened in August, 1917, the first establishment of its kind in Russia. A few months later Professor Koltsov assigned the young zoologist Dmitri Romashev the problem of testing the effect of X-rays on the fruit fly (drosophila). Koltsov could have applied a dozen other methods and blundered round his goal for years. His choice was penetrating radiation—he already knew that mutation was mostly caused by some force rarely found in nature and against which the cell had not developed protection. Unfortunately, Koltsov was unable to test this brilliant conjecture experimentally. In those difficult years neither apparatus nor literature was available; there were not even enough drosophila for experiments.

Drosophila mutants were brought to Moscow in 1922 by the American geneticist Herman J. Muller. Five years later he published his paper *On Artificial Transmutation in Drosophila.* In this short four-page communication he informed the scientific world that by irradiating drosophila he had induced new characters which were transferred to the offspring. Nineteen years later Dr. Muller was awarded the Nobel prize for his discovery. It is hard to say why the Swedish Academy was so long in making the award—perhaps the members were waiting for a refutation.

Geneticists, however, immediately acclaimed the achievement and loudly applauded Muller at the Genetics





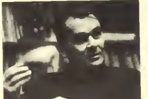
Pioneers in Soviet genetics: Professor Nikolai Koltsov (left) and his pupil Professor Alexander Serebrovsky.

Congress in Berlin the same year.

The young biologist Nikolai Dubinin, a pupil of Professor Serebrovsky and today a member of the USSR Academy of Sciences, in 1928 studied the changes in the appearance of drosophila caused by X-rays (*Sputnik* No. 12, 1967). He came to the conclusion that Thomas Morgan's theory that mutation was a transformation of the entire gene as an elementary, indivisible unit was not in accordance with the facts. It turned out that the gene, like the chromosome, was a long chain which could change in parts. In 1933 Dubinin was awarded the Rockefeller prize for the development of this theory.

In 1936 Herman J. Muller spoke of the high level of Soviet science. He noted that in spite of the great material needs which had to be overcome in building a new society, the Soviet Union had managed to raise a number of branches of theor-

Nikolai Dubinin, Member of the Academy of Sciences (top picture), Professor Serebrovsky's pupil. Nikolai Dubinin has founded his own school of genetics, one prominent representative of which is Professor Dmitri Belyaev (below)



etical science, including genetics, to a very high level, in some respects higher than in other countries.

This was not an empty compliment. Even Muller's own discovery had been anticipated by Soviet geneticists: two years before the publication of his epoch-making paper, Nadson and Filippov of the Leningrad Radium Institute had induced mutation in microbes with X-rays. At that time the names of Nikolai Vavilov, Nikolai Koltsov, Sergei Chetverikov, Alexander Serebrovsky, Nikolai Dubinin and other Soviet geneticists were widely known in world scientific circles.

The recently opened Institute of General Genetics is headed by Academician Nikolai Dubinin. Work on artificial mutation is likewise being conducted at other Moscow research establishments, and also in other cities, among them Novosibirsk. The Institute of Cytology and Genetics at the Novosibirsk Science Centre (*Sputnik* No. 9, 1967) is headed by Professor Dmitri Belyaev, who has succeeded his teacher Nikolai Dubinin.

Now that scientists have gained an understanding of the mechanism of heredity they have begun to control it, begun to synthesize genetically new species of plants and animals. Perhaps the day is not far off when genetics will make a revolution in developing and fixing desirable hereditary features in man.

Anyone who loves clothes has dreams of a mink coat, perhaps in some exotic shade.

Delectable furs to some, a problem in genetics to others

DO YOU KNOW THAT . . .

. . . A human hair, stuck on a steel sheet before rolling, leaves an imprint on the steel, so high are its tensile and compression strengths.

. . . A typist's fingers, in one day's work, cover 12.6 miles.

. . . The world in 1935 saw five solar and two lunar eclipses. In 1982 earthmen will see a near-repetition of the record: four solar and three lunar eclipses.

. . . Sweden in 1659 issued the heaviest metal coins in history, weighing 38.5 pounds each.

. . . Damascus became a capital in the second millennium B.C., and is thus the world's most ancient capital city.

. . . Any Norwegian cutting or damaging a tree without an official permit must by law plant three trees of the same variety.

from the newspaper Trud

CROW'S PAT. PENDING

A couple of crows that make their home in the pine forest not far from Vilnius, the capital of Lithuania, could patent their invention.

Using 123 strips of white aluminium wire, measuring from 30 to 100 centimetres (a total of about 60 metres), three metres of insulated electric cable and eight metres of medical gauze, they wove what is probably the finest crow's nest in the history of all crowdom. This magnificent example of good old know-how and feather-grease hangs suspended from a pine tree some 15 metres from the ground.

from the magazine Priroda

JELLYFISH PREDICT STORM

Strange as it may seem, the jellyfish has a highly sensitive acoustic organ: it can hear storms coming. Research workers at Moscow University's biophysics lab have designed an electronic model of this organ. The result: stormy weather can be predicted 15 hours ahead.

from the newspaper Trud

by Ivan Orlov
from the weekly Nedelya

BIRCH TREES

Everybody in Russia loves the birch tree. It is a symbol of beauty, fidelity, tenderness and purity.

In ancient Rus it served a variety of purposes. People wrote on birch bark and it was the raw material for tar. Cabin logs interlaid with birch bark lasted longer. When iron was first worked in the Urals, birch charcoal was used as fuel. Even today, it is used for the same purpose here and there. Drainage ditches for dirt roads were lined with birchwood. Pressed birch pulp was a substitute for non-ferrous metals and was used

to make packing rings for oilseals and pipes, hushings and gear wheels. Good building timber comes from birch forests.

Birch woods help regulate the water cycle. An infusion of birch buds is used for stomach ailments. The sap of the birch contains glucose and various acids and salts. It has been a favourite Russian drink since time immemorial and is used to make birch syrup and a pleasant, healthful drink.

In spring—round about the end of April and beginning of May—the birch tree drips with sap. As soon as the snow melts, its roots pump the trunk and branches full of water, hardly any of which evaporates because the tree is still bare. Dissolved carbohydrates are delivered by the water to the swelling, bursting buds.

Scientists at the Sverdlovsk Forest Cbemistry Station and the Byelorussian Forestry Institute have determined that the sap may he collected for about 10 years without detriment to the tree. The average tree yields about 145 quarts. Tbe sap of the silver birch is particularly sweet, but even it can be improved by aeration with carbonic dioxide. The sap is a fine ingredient in the making of confectionery.

Bircb kvass, a national soft drink, is made by beating the sap to about 95 degrees Fahrenheit and adding some 10 grammes of yeast per quart. It is then allowed to cool, slightly aerated, and is ready to drink in two or three days. It will keep for two or three months.

Syrup is made by evaporating the sap in a metal flat-bottomed vessel over a fire. From time to time, the froth is skimmed and when a third is evaporated, more sap is added. This is done two or three times, until the saccharimeter sbows 65. The syrup, the colour of strong tea, is filtered and poured into bottles. In a cool place it will keep for up to a year.

Birch sap can also be used for making wine. In 1891, Professor F. Arnold of the St. Petersburg Forestry Institute reported that people in the Nortb of the country used it to make a kind of champagne.

There are 40 varieties of birch in the USSR, among them the dwarf Arctic birch; Ermans, or stone birch, which thrives in the taiga on the shores of the Sea of Okhotsk; Schmidts, or iron birch, which grows in the Maritime Territory, the Far East. The iron birch is almost as tough as boxwood. But the peer of them all, the silver birch—*Betula Verrucosa*—needs a lot of light and good soil and shuns bogs. With the fluffy birch, said to be an offshoot of the silver hirch, it covers almost 215 million acres across the country.

More pictures on pp. 104-107

A fledgling nuthatch. The grown nuthatch and the woodpecker are the birch tree's stoutest defenders.

Even a rough garden bench looks elegant when it is made from birchwood.

Birch twigs being dried for use in the steam bath.

In a basket of birch bark the berries can "breathe", and so keep longer than in a metal, glass or plastic container.

Birchwood can be used to make many interesting objects.

If the outer layer of the birch bark is removed with care, the tree itself will not suffer, as people have known since olden days when they used only natural materials to make household utensils. They loved to decorate these with gaudy pictures, the outlines of which were often burnt into the bark.

IS CONFESSION ? PROOF OF GUILT?

by Arkadi Vaksberg

The author, a practising lawyer, relates an experience that raises the perennial question of how far a confession should be admitted as proof of guilt. For obvious reasons all the names in the story have been changed.

Early one August morning a young woman, Mrs. Vera Kuzina ran sobbing into the street from her flat in a four-storey house in the very heart of Moscow. She found the militiaman on the beat and begged him to come back with her to the flat, for there was a drunken stranger asleep on her bed.

She had been awakened in the night hy a man climbing into her room through the open window, and had grappled with him as he attacked her. But the man was so drunk that he had soon tired and passed out right there, on the bed, where he still lay.

The militiaman went along to her second-floor flat and sure enough found the man fully dressed, snoring on the bed. A few hours later the man sobered up and was brought hefore an investigator. He said he was Ivan Sarantsev, 30 years of age, a lorry driver. He admitted the charge when it was read out to him.

The night before, he said, it had occurred to him that it would be fun to enter someone's flat, and he had picked on the one where he was discovered drunk and asleep that morning. He had got there hy walking up to the garret and climbing out onto the roof; it had been raining heavily and the roof was slippery, so he had to crawl until he got to a drain-pipe; he climbed down that until he got to a ledge, along which he walked to the open window and got in. The rest had happened exactly as Mrs. Kuzina had testified.

A few days later Sarantsev's mother came to my office. She was an elderly country woman. This was her first visit to Moscow, and the occasion could have been a happier one. Beside herself with grief, she appealed to me to act as defence counsel for her son. I agreed.

There seemed little I could do, however. He had heen caught red-handed, and there were marks of struggle on Mrs. Kuzina's body and clothes, always important (and often decisive) evidence in cases of this kind. The investigator bad verified the facts: they were all there—garret, drain-pipe, ledge and open window. A medical check-up showed that Sarantsev was of sound mind. Then there was the clincher in the form of his confession.

It looked like an open-and-shut case. As defence counsel, I had simply nothing to go on. I wondered, though, what had made him start on that perilous climb in pouring rain, at the risk of slipping and hreaking his neck at any moment. And all without any definite aim, without knowing whether there would be an open window, what he would find in the room, or how he would get out again. Even allowing for the fact that he had drunk more than a hottle of vodka, there was something fishy about the whole thing.

In my long talks with him before the trial I suggested various possihle reasons for his behaviour—perhaps he had seen the woman somewhere and she had led him on, he had followed her and waited until she was alone. I put it to him, but he swore he had never seen her before. Aware that sometimes a man facing trial does not trust even his own lawyer, I got in touch with some of his friends and checked his story. None of them had ever heard of Vera Kuzina.

The only thing on the credit side was that he had a clean record and that no serious consequences had resulted from his foolish escapade.

Then came the day of the trial. A dark-haired woman with cold grey eyes, head held high, described her horror when she found a drunken stranger in her room at night. The militiaman, the janitor and tbe witnesses they had summoned confirmed they had seen the accused "dead drunk" in Mrs. Kuzina's hed. An expert submitted drawings to show that Sarantsev's climh was not

"a technical impossibility". Another expert said that he knew of many cases when men under the influence of liquor had done some very neat tight-rope walking.

Nevertheless, there seemed to be some doubt in everyone's mind about Sarantsev's story. The examination and the cross-examination in court were painstaking, the judge himself and the two assessors interposing questions. But the evidence was all there, without any apparent contradictions. Sarantsev insisted on his guilt, and invoked his right to say no more.

The bench retired to deliberate. The verdict was guilty, and the sentence—a long spell of imprisonment.

That seemed to be the end of the case, but I was bothered by Sarantsev's reckless and unusual behaviour. Even the most hardened criminal makes an effort to mitigate his case, and looks for loopholes. Sarantsev had made no attempt at all to defend himself and never even asked me what his chances were of getting off with a light sentence.

I went to see him in prison, and found him a different man.

"A bit of hard luck, that sentence," I said.

"Sentence be damned!" he exclaimed. "She didn't even look at me. The least I had hoped for was a kind glance, some slight gesture to let me know she appreciated what I had done. Not a bit of it. She seemed full of spite."

He hroke down and sobbed like a child. Then he told me a story which sounded much more like the truth.

He had met the woman, an economist, at a dance a few months before, and they had gone hack to her flat together the very first night. Since then he had regularly visited her whenever her hushand, a senior civil servant, was on night duty or away on one of his husiness trips.

Sarantsev had always made easy conquests and thought that love was a literary convention for silly young girls. When he suddenly discovered that he was deeply in love with Vera, he felt that it was "fate". He was longing to ask her if she would divorce her husband, give up the comforts of a solid home to marry an uneducated lorry driver from a Yaroslavl village. He had to know the truth, however bitter, and though he was no coward (as many of his rivals had had occasion to discover) he simply could not work up the courage to speak to her about it, until he found Dutch courage in a bottle.

Brought into the militia station, he had heen shown Mrs. Kuzina's statement. He knew her handwriting well, and it had been quite a shock to see himself designated as a "stranger" who had "attacked" her. But he was prepared to do anything for her sake—he had walked the crumbling ledge with shut eyes three times, just to prove it—and he understood the whole thing in a flash. She had been unable to rouse him, and with her hushand due home any minute, she had sacrificed her lover for her good name. He was prepared to take the blame, whatever the price. That is why he had admitted the charge, and confessed. But why should he go on pretending, now that she had shown her true colours?

I was convinced that he was telling the truth. It all hung together. I appreciated his readiness to protect her, hut was sorry to see him disillusioned when it was too late. Too late? I reminded myself it is never too late to fight for justice. I entered an appeal, and soon the case was re-opened.

The prosecutor delivered a powerful speech: Sarantsev, he thundered, far from showing repentance, was now trying to mislead the court and blacken the name of an honest woman. He had failed to give good reason why he chose to deny his earlier statement, so why should the court assume that he was telling the truth now rather than the first time?

The prosecutor's speech rang with conviction and was a model of logic, which is more than I could say of my own. I said I felt sure Sarantsev was now telling the truth, hut the court needed much more to go on than that. This being a case on appeal, neither prisoner nor witnesses were present. The earlier judgement was upheld.

I toyed with the idea of dropping the case, but when I remembered the look of despair on Sarantsev's face I felt I must make a fresh effort. I simply had to find evidence to counter that of the witnesses and experts. I had to prove that Sarantsev's second version was true. But where was I to get proof? After all, Sarantsev had himself unwittingly destroyed all the evidence: no one had ever seen him visit the woman. Who was now to hear him out. Then I had a brainwave. Why not get the walls, the furniture, the clothes, the crockery, the books, all the things in her flat to bear witness against her? That was it! I believed I had the answer.

With my help Sarantsev sent a petition to the Supreme Court. In it he gave a detailed description of Vera's room, her clothes, the crack in a coffee cup, a spot on one wall, and cited facts from her own life which only a close friend could know—the myriad details which, all taken together, would save him. They had laughed together over some of her stories, never imagining that these personal anecdotes would one day acquire the force of evidence. Insignificant in themselves, they were irrefutahle proof, when hrought together, of the fact that the two had been intimate for some time.

The court ordered a thorough check-up and the facts were confirmed. It was now up to Mrs. Kuzina to refute them. Under cross-examination at a fresh trial she made a pathetic showing: the proud beauty had turned into a spiteful fury who simply could not understand how that "piece of putty" had dared to act against her.

"Everything is clear," said the prosecutor. "We withdraw the indictment. I am instituting proceedings against Mrs. Kuzina for false accusations."

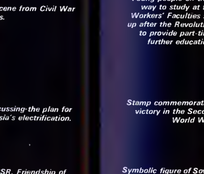
Sarantsev was set free. Justice had finally triumphed.

The series of stamps issued in honour of the fiftieth anniversary of the Revolution in October 1917 opens with one showing the State emblem of the USSR and a red star.

The remaining stamps illustrate various stages in the history of the Soviet state:

Lenin proclaims Soviet power at the Second Congress of Soviets.

A scene from Civil War days.



Discussing the plan for Russia's electrification.

"USSR. Friendship of the Peoples" is the inscription on this stamp.

Construction schemes of the First Five-Year Plan.

JUBILEE STAMPS

Festive occasion at a collective farm.

Young people on their way to study at the Workers' Faculties set up after the Revolution to provide part-time further education.

Stamp commemorating victory in the Second World War.

Symbolic figure of Soviet man launching a sputnik.

TRICKS OF THE TRADE

What brings success to Soviet athletes? Natural talent—or plain hard work on the training field and in the gym? What methods do they use to raise their sports skills to such pitch?

Sputnik readers have asked. These and many other questions have been put to us by readers. To answer them we introduce a new feature *Tricks of the Trade*. Under this headline, some of the most famous Soviet athletes will reveal sports secrets, relate the most dramatic experiences in their careers and offer tips for success.

Our younger readers will be especially interested in the stories of top Soviet stars in track and field, wrestling, boxing, hockey and rowing.

YURI VLASOV, Merited Master of Sport, world champion and world weightlifting record holder, starts the ball rolling in this issue, with a word of advice to up-and-coming sportsmen with Olympic ambitions.

A Word to Aspiring Sportsmen

from the magazine Fizkulturai Sport

It's good to hear that you've decided to train hard, and seek a place in the Olympic Games. But I must warn you that you've taken on a difficult job. To make the Olympic Games is not so easy. I am not giving away any secrets when I tell you that an Olympic contender must shine as few can. And that is not all. The Olympic contestant needs a strong will to win, cast-iron nerves and a certain amount of furious energy. And never forget that good results in sport don't stay good for long. The record-breaker can't rest on his laurels: tomorrow the record may be shattered.

The 500-kilo mark in weight-lifting was only for the "demigods" not so long ago. Today, many bar-bellers don't want to think about 500 kg. It only took a few world tournaments for dozens of weight-lifters to get over the 500-kilo hurdle.

Now the goal is 600 kg—and this may soon become common-place. I can see fans writing letters something like this: "How long are we going to see out athletes hoisting one and the same weight—600 yester-day, 600 today. How about 620?" You may think this a joke. Then you're wrong. Six hundred is in our muscles already . . . Just wait and see...

Avalanches of new records are engulfing all sports.

An engineer begins to study for his vocation in his childhood—when he learns addition and subtraction in the first year at school. Sport can-not begin that early because the child's physique cannot cope with heavy strains and stresses. But it definitely starts at school, for a person cannot develop the required qualities in the comparatively short time avail-able after he is adult.

General physical training at an early age is essential. Gone are the days when victory was won only by natural talent and exemplary hard work. All-round physical develop-ment as a schoolchild is essential to enable a sportsman to face up to great stress and strain in later years. It will give him the capacity to polish up his finer points, and make them stand out.

The time isn't far off, I think, when victories in adult sports will be utterly impossible without preliminary sports training in junior years. And I don't only mean Olympic victories. Future world records are now in the making in school gyms and sports clubs.

Entry to the world of sport is entry to a new world—a world of health, strong muscles, tough but satisfying contests. You will get to love the discus, the cinder track or boxing ring—and love it for the rest of your life. But to win, you must first work, and work hard. Victory is a heroic, fleeting moment. The road to victory is a difficult one all the way. And it does not pass in front of roaring crowds all the time. When you fall or suffer a setback, you have to find enough courage and determination to pick yourself up, and get over the difficulties.

Don't be a one-track-mind fanatic who thinks he can live by sport alone. Don't wear blinkers, don't narrow down your world to the barbell or the ice-hockey rink. Love sport with passion, but love it as a friend. Fanaticism will wring you dry. In the end it will evoke pettiness; it will stab the sport you once loved. This sport will become repulsive; it will seem to you a crude and worthless pastime. For delight in any sport cannot compare with delight in the world as a whole, with delight in a full life. And it is silly to fence your-self off from life.

My advice to you, the aspiring sportsman, is: strive, try to under-stand, to think things out, have a go! Then training will become a joy, something to look forward to, and not just a routine. Only then will you appreciate that sport is a science. A great science—the science of governing your body. When you learn at last how to bring out the strength you need from your body, you will find out many interesting things about yourself.

One more bit of advice—look after yourself! Don't try to use your youthful vim and vigour to skip through all stages of physical training too quickly. Any crash programme is liable to boomerang. Good inten-tions may be without limit, but bodily capacities are not.

Watch your nerves. Don't knock yourself to pieces with excessive training and futile competitions. It is the athlete with the strongest nerves rather than the man with the strongest muscles who comes out on top—that is a feature of today's sport. Reserves of strength may be great, but they cannot be used adequately if self-control is lost, and nervous fatigue sets in.

Don't give up when the going is tough. If you are tired, take a rest. Have another look at your training schedule, then make a fresh start. Remember what Victor Hugo said: "Vouloir c'est pouvoir".

FAIRY-TALE FIELD

If you ever visit Yalta, do not miss the Fairy-Tale Field, as it is known locally. It is just a short bus ride from the town. The setting is picturesque—Ai-Petri Mountain, Uchan-Su, a rushing waterfall, and not far away, the Black Sea. Fancifully carved gates mark the entrance to the world of Russian fairy-tales. The vityaz *(knight), the hut on chicken legs, the fearsome wizard with a long grey beard, and the sinister owl who foretells the future—these are some of the thirty fairy-tale characters represented in wood here.*

This collection is the work of Pavel Bezrukov, the sculptor, who arrived in the Crimea 33 years ago to take a cure—and stayed. In gratitude to this region that restored his health, he created his Fairy-Tale Field, a noteworthy addition to the beauties of the Crimea.

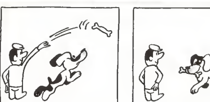
The wizard with the long beard—it is the source of all his strength—seems to have appeared right out of the mountain.

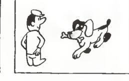
In this hut on chicken legs lives the wicked witch Baba-Yaga, with whom the good folk in Russian fairy-tales invariably do battle.

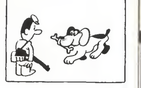
This is a wonderland for Soviet children: here they live out the fairy-tales they hear every night.

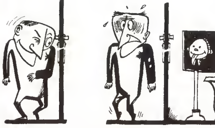
Pavel Bezrukov will gladly show anyone round.

"The eagle and the snake".









CIVIC COATS OF ARMS IN RUSSIA

by Vadim Grazhdankin

from the magazine Yuny Tekhnik

Coat of arms of Moscow

Russian towns first began to acquire official coats of arms in the seventeenth century. These were conferred upon the most ancient towns, those with centuries of tradition and an illustrious history. They took symbols and images traditionally associated with the life of the town, with military feats, with the natural riches of the locality—in the forests, the waters and the depths of the earth, and with local legend and folklore. Long before towns had coats of arms they used these devices on town seals and military banners.

Less important towns received their coats of arms rather later, mainly between 1722 and 1727, in the reign of Peter the Great. These emblems usually bore witness to the special features of the town concerned and its places of interest.

From these coats of arms one can get an idea of the development of handicrafts in old Russia. Tula's shows the work of the town's armourers and that of Solikamsk salt, while on the insignia of Saratov, a fishing town, sturgeons are depicted. Sometimes a symbol was chosen because it accorded with the name of the town. Melenki (Little Mills) had a mill, Gorokhovets (Pea Town) a pea, Kadnikov (Barrel Town) a barrel, and Starodubsk (Old Oak) a spreading oak tree.

Recently the *Rodina* (Motherland) Club was formed in Moscow for young people studying the history of Russia. Its members collect all kinds of interesting historical material, including information about municipal coats of arms. Many of the symbols have taken on a new lease of life—for instance, Yaroslavl's bear rampant can now be seen decorating the bonnets of lorries. On cars from the Gorky Motor Works is a silhouette of a running deer, a modernized version of the emblem of Nizhny Novgorod, now Gorky.

Coat of arms of Rostov

Coat of arms of Yaroslavl

Coat of arms of Smolensk

Coat of arms of Uglich

Coat of arms of Vologda

Coat of arms of Kazan

Coat of arms of Vladimir

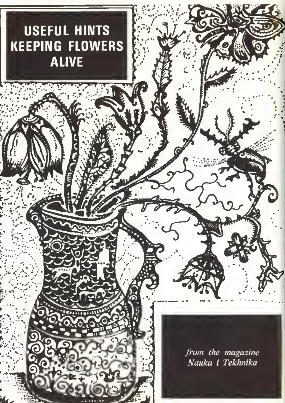
Coat of arms of Suzdal

Coat of arms of Pskov

Coat of arms of Pereslavl Zalessky

Coat of arms of Tver

Coat of arms of Nizhny-Novgorod



USEFUL HINTS KEEPING FLOWERS ALIVE

from the magazine Nauka i Tekhnika

Flowers should be cut at dawn or just after sunset, when plants have a higher sugar content. Cut the stem at an angle, to increase the nutrition area, and use a sharp knife (not a pair of scissors, which ruin the stem). Remove the leaves low on the stem (and also high on chrysanthemums, roses and lilac) to prevent the water stagnating and the plant losing moisture. As soon as the flowers are cut, place them in deep water at room temperature, not crowding them too closely. Take a pail of water along with you into the garden so that you can keep the flowers in water all the time.

Before placing poppies, hydrangeas, peonies and dahlias into water, hold each stem over a candle flame to remove the sap on the cut end, for it tends to clog the vessels. Do this, too, with such hot-house plants as ferns. Split the woody stems of phloxes, lilac and jasmine before placing them in water. Do not cut but break the stems of chrysanthemums. Cut dahlias and cyclamens only when their flowers are in full bloom. Cut other flowers in bud when these have acquired colour.

When you buy flowers, be sure to make a fresh cut, which is best done in water.

Change the water and cut off half an inch or so of stem every day. To keep the water fresh, add potassium permanganate, just enough to turn the water a light pink, or some charcoal. Keep the flowers out of the sunlight.

Chemicals help to prolong the life of flowers. A sprig of lilac will last six or seven days longer in water containing 8 per cent sucrose and 0.05 per cent boric acid. An 8 per cent solution of glucose, instead of water, will keep tulips alive twice as long as usual.

THE LUCK OF THE IVANOVS

from the newspaper Trud

Five Leningrad wives all named Ivanova each won a motor-cycle in the same lottery. The youngest, 19-year-old Ludmilla Ivanova, won a 465-rouble machine; the oldest, Tatyana, came home with a 1,250-rouble de luxe model.

The five women brought together by the luck of the draw held a celebration and decided to form a team of Ivanov wives to challenge a team of Ivanov husbands in motor-cycle riding. The husbands readily accepted the challenge and, firm believers in their wives' lucky stars, presented each of them with five more tickets in the next lottery.

A SATIRIST RECALLS . . .

by Alexander Raskin

from Literaturnaya Gazeta

The following incident took place at a meeting of humorous writers. The door opened and an elderly man with a bulging briefcase tiptoed in:

"Is this the satire and humour section?" he whispered. On receiving an affirmative reply, he found a spare seat, sat down, put his briefcase on his knees, rested his head upon it and immediately dropped off into a wonderful, impenetrable sleep. He stayed that way for a couple of hours, undisturbed by even the most heated debates. When the meeting finished someone woke him up, and he went out with the rest.

An indication of the state of our humour or simply of the chronic inability of some people to stay awake? I do not know. But I saw it with my own eyes.

☆ ☆ ☆

Here is an incident from the biography of that outstanding satirical artist Pavel Fedotov. The teacher gave the group of young artists the theme: "The Theft of Heavenly Fire". All of them, of course, illustrated the Prometheus myth. All except one. Pavel Fedotov depicted an official smoking a pipe, getting a light for it from the skies by means of a burning-glass.

☆ ☆ ☆

One of a group of poets who were to appear on television was asked to take off his glasses, since he knew his own poems by heart and the thick lenses reflected the dazzling lights and made it impossible to see his face properly.

He thought it over, then said proudly: "No, the people know me in spectacles!"

☆ ☆ ☆

An official from a theatre administration asked an author he knew: "Why on earth don't you write a play for us? It means fame and money . . ."

"I'm a novelist, don't forget. I can't write plays."

"Would you like me to teach you? It's very simple. On the left you put down who is speaking, on the right you put down what they say . . ."

☆ ☆ ☆

When somebody burst out laughing at an evening of bumour and satire, the man who was presiding tapped his pencil reprovingly against the water jug.

☆ ☆ ☆

A well-known poet was looking high and low for someone to parody his works. He demanded: "Why are there parodies of everyone's work except mine? What's the matter with me? Don't I deserve it, too?"

A subtle understanding of popularity.

☆ ☆ ☆

Mikhail Svetlov was reproached for writing unpardonably little.

"Better to write unpardonably little than unpardonably much," was his reply.

☆ ☆ ☆

Some young journalists had gathered together at the editorial offices of a magazine. A critic wbo happened to be there at the time started arguing heatedly that the very conception "young poet" was absurd.

"Take you, for instance," he said aggressively to a quiet individual in glasses. "How old are you?"

"Twenty-six."

"You see! At your age Lermontov* had already written *A Hero of Our Time*. What kind of 'young poet' are you?"

"Listen," the young man in glasses said quietly. "At your age Belinsky* had been dead a long time. But I'm not bothering you about it."

☆ ☆ ☆

Before the war Sergei Eisenstein was art director of the Mosfilm Studios. I remember being in his office. Tbere were some armchairs, some ordinary chairs, and a little round occasional table with a carafe of water upon it. There was no writing desk, and I could not help asking whether this was accidental or a matter of principle.

"Principle," Eisenstein said. "What divides people more than anything else in an executive's office? The desk! What stands in the way of useful, fruitful talks? The desk! What does a bureaucrat sit at? A desk! So I had the desk taken away."

I do not know how correct that theory is. But I do know tbat our talk with Eisenstein without a desk was a lively, interesting one.

* Mikhail Lermontov (1814-41), Russian poet who met a tragic death in a duel.

* Vissarion Belinsky (1811-48), a Russian literary scholar and critic.

BREATHTAKING IDEAS

by Mikhail Rebrov
from Krasnaya Zvezda

To begin with, there are the inevitable fantasies and fairy tales. Then follow the scientific calculations. And finally the idea comes to fruition.

Konstantin Tsiolkovsky

Out of the Sea, to the Moon

Some space-minded enthusiasts, remembering Archimedes' Principle of floating bodies, insist that the ocean makes the best launching-pad.

The huge rocket case, some 500 feet high and 80 feet in diameter, can be floated to the fuelling site. As the fuel fills and weights the tanks, this giant rocket-pipe, comparable in size to Cheops' pyramid, will sink deeper and deeper into the sea. The rocket's nose cone rises above the water as the 20,000-ton giant takes a vertical position. After last-minute checks, the first-stage engines are started.

When fuel burns up during the flight, the rocket's first stage parachutes down on to the sea. The second stage puts the passenger section into orbit and, after circling the globe once, also lands in the ocean.

From water, say the originators of this idea, man will be able to launch 700-ton loads. They see in this idea promise of "extensive communication with the Moon".

Rocketless Journey to Mars?

This idea may seem ridiculous at first sight. In what way other than with a jet accelerator is it possible to attain the speed of 4.9 miles a second necessary for putting an Earth satellite into orbit? Or a moon-flight speed of 6.9 miles a second? Or a speed of 10.3 miles a second to escape from the Solar system?

But on paper it's simpler. To launch an Earth satellite you only have to build a tower 22.5 thousand miles high at the equator.

Earth, spinning on its axis, would give the top of the tower escape velocity. At this height, a man in a space-suit could become a satellite by making one step.

To break all gravity fetters, the tower's height should be extended to 28,500 miles. Up a bit higher, at 31,000 miles, it would be possible to step on to Mars. The shortest step would be of some 248 million miles.

Solenoid Gun

Sci-fic writers would have us stepping to the Moon from a tower like the one just described. And how about getting back? The Moon has no atmosphere, so take-off would require no jet engines, they say. A solenoid gun would be enough. The muzzle of a solenoid gun would consist of a tunnel of easily magnetized steel wire, which could accommodate a rocket. If an electric current were passed through a giant coil of this kind there would always be a magnetic pole in front of the rocket attracting it and drawing it forward, and the solenoid gun could eject the "projectile" at an impressive speed.

Some experimental speeds have been high enough to overcome lunar gravity, which has made the solenoid gun advocates hopeful.

Interplanetary Billiards

"Interplanetary billiards" enthusiasts assure us that by 1978 man will be able to start work on a vehicle that would take only nine years to visit Jupiter, Saturn, Uranus and Neptune. They prophesy that the craft could get extra energy without expending any as it approached each of the four planets, and bounced off the surface of one in the direction of the next.

Each planet's force of gravity is expected to provide extra acceleration. As long as the spaceship flies near the planet, within its field of gravity it will acquire the speed at which that planet circles the Sun. This speed, added to its own impulse, is considered sufficient to push the vehicle out of the planet's gravity field, and set it racing for another planet. During the flight between fields of gravity the craft is driven by its solars electric battery.

"Interplanetary billiards" would slash the time of space travel. To fly direct to Neptune would take—30 years.

SEA BATHING IN MOSCOW

from the weekly Nedelya

As the swimming season ends on Black Sea beaches, Muscovites will open their swimming season in the same kind of salty, mineralized waters.

An underground sea with a chemical composition something like that of the Black Sea lies under part of Moscow, several hundred feet down. Drilling work is to start near the *Moskva* swimming pool, Kropotkinskaya Embankment, to tap this subterranean salt lake. The principal chemicals in the underground waters are chlorides of sodium and potassium, bromine, iodine, cobalt, magnesium and manganese. But the concentration of salts in the Moscow underground sea is ten times that of the Black Sea waters at the resort of Sochi, and twelve times as much as in the sea near Odessa. The Moscow water will be diluted, and swimming pools with sea water of varying concentrations provided, to suit all tastes.

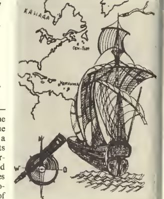
Three million people a year use the *Moskva* swimming pool. Numbers will increase as sea baths become available. The mineralized water will be used to treat lumbago, rheumatism, neuritis and other ailments, both at the pool and at polyclinics.

The Life and Wanderings of Fyodor Karzhavin

by Yuri Gerchuk

from the historical and biographical collection Prometei

Scholar, artist, traveller and free-thinker, Fyodor Karzhavin visited the French West Indies in the late eighteenth century. His adventures included gun-running for American rebels, capture by the British, and friendly associations with Indians and escaped Negro slaves.



In the eighteen-seventies the Russian public were stirred by the account that reached them, a century overdue, of the exploits and experiences of Fyodor Karzhavin. His story was unearthed from old archives and diaries bought in December 1870 by Professor Nikolai Durov, collector of antique books. Durov established that Karzhavin, the restless and scholarly traveller and free-thinker, was the author of these records. Durov published his first article, based on these archives, in *Russian Antiquities* a few years after his discovery. But most of the exciting documents found by Durov and many that Durov never saw still await publication.

The Czar's Secret Investigation Department interrogated in February, 1756, a St. Petersburg merchant, Vassili Karzhavin, arrested on charges of having taken his son to Paris without permission, of having left his son in Paris with his brother Yerofei and of expressing disrespectful opinions about the Russian Empress and her court ministers.

The man responsible for Karzhavin's arrest died during the interrogation and he was freed on grounds of insufficient evidence.

Fyodor Karzhavin, the son, who had left Russia 13 years earlier, returned in the summer of 1765 as a 20-year-old student of Paris University. With him was Vassili Bazhenov, a 28-year-old architect, who had made an educational journey to France and Italy.

To his father's anger, Fyodor preferred teaching at a seminary to following his father as merchant and usurer. Two years later Bazhenov was given the task of preparing plans for a huge palace in Moscow's Kremlin. He recruited Karzhavin for the undertaking. Though not an architect, Karzhavin compiled Russia's first dictionary of architecture. He knew several languages, excelled in mathematics, mechanics, history and literature, made translations and taught Bazhenov's young assistants.

A few years later Fyodor visited France again. A passport issued him in Paris in September 1776 read: "Named herein Theodore Karzhavin, teacher of several languages, native of St. Petersburg, 32 years of age, height, 5ft. 2ins., hair and eyebrows chestnut, plump, oval face, on way to Le Havre to hoard a ship and sail to Martinique for trade purposes."

Karzhavin sailed as a merchant, but could not follow his father's pattern of trade. He had spent his last penny on books, prints and pictures for profitable resale to rich planters of Martinique, French West Indies. Along with learned works on medicine and mathematics, Karzhavin carried controversial political writings by French philosophers: Jean Jacques Rousseau's *Social Contract*, and *Histoire Philosophique et Politique des Etablissements et du Commerce des Européens dans les Deux Indes*, by Guillaume Raynal.

Karzhavin sold pictures and books and taught children in Saint-Pierre, Martinique's largest city. His continual wanderings over the island distinguished him from other citizens. Many advised him to keep away from the mountains—they were infested with Negro slaves escaping the overseer's whip and back-breaking toil under the tropical sun. The slaves had nowhere else to escape on the small island, and many froze to death on the mountain tops.

Fyodor ignored the advice. He went among the escaped Negro slaves and made sketches of them. He also weighed a humming bird's nest, watched a huge hairy spider hunt this little bird and studied local reptile species, including the formidable iguana—an edible lizard, which a smiling Negro was dragging to

the market by its tail.

The armed merchantman *Le Senti* set sail from Saint-Pierre on April 13, 1777. *Le Senti* avoided the regular sea routes: a war was on between Britain and American colonists fighting for their independence, and British men-o'-war and privateers were blockading the American coast, trying to prevent much-needed arms reaching the rebels. The Frencb writer, Pierre Augustin Caron de Beaumarchais, set up a trade office in France for the supply of arms to American rebels by secret blockade-running. Karzhavin joined this business, investing all he had in *Le Senti's* arms cargo and taking responsibility for manning the guns in any encounter with the British.

The route along the rebel-held coast was also the route between various French colonial islands, so the ship was safeguarded by papers testifying that it was sailing for French-ruled Miquelon Island, in the Gulf of St. Lawrence, Canada. The British were sceptical about the ship's papers and, after several boardings, made to seize *Le Senti* off Virginia. "But, luckily, in a very dense fog we fled our captors and entered Virginia amid a thousand dangers, not knowing wbere we were sailing, without any experience or a pilot," Karzhavin wrote.

Nearly two years passed before Karzhavin returned to sea. In 1779 be was in the port of Hampton, in Chesapeake Bay (South-East Virginia) aboard *La Gentille,* ready to sail for Martinique. The coast was still blockaded and privateers were on the prowl. The ship was held up in port; her crew fled, fearing capture. The first attempt to venture out of port failed. The second made *La Gentille* a British prize.

The British landed Karzhavin on an ice-bound coast. He walked from Philadelphia to Boston, "through snow, ice and otber discomforts of the winter," with a meagre ration of a "prisoner of war". He was seeking a Martiniquan friend in Boston, but did not find him, and had to walk all the way back.

"In nineteen days," wrote Karzhavin, "I was back in Philadelphia, nineteen days full of dire hardships.

For two days I was blinded hy refracted rays in the snow-bound fields, braving the risk of being captured by hoth the British and the Americans, whose pickets took me for a spy because I had made a very short stay in Boston and was carrying postal parcels from Philadelphia to Boston and hack and walking, instead of on the main road, on the line which divided them from the enemy and through the dispositions of Washington's army."

While hiding from the British, Fyodor met American Indians in the forests. Unlike most colonists, who despised them as "savages", Karzhavin showed interest and respect, just as for Negroes. Later, back in Russia, he vigorously objected to dubbing these races "savages", as was the custom of the times. He wrote:

"Many different peoples bave I seen, peoples that live not as we do, nor like the rest of the Europeans; I have seen intelligent people as well as dumb; everywhere I found human beings; but nowhere did I find a savage, and, I must confess, I have never seen anyone as clownish as myself."

He returned to Indian settlements carrying goods from a French merchant. An inefficient merchant himself, he turned salesman for another.

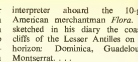
From trade he almost graduated to diplomacy. In Williamsburg, where two red-brick buildings dominated tbe town—the William and Mary College, one of America's

oldest, and the Capitol—he met Thomas Jefferson, a Leader of the Revolution and author of the Declaration of Independence, who had just been inaugurated Governor of Virginia. Jefferson took a liking to the clever, cultured Russian. The new Republic needed support from other nations. France and Spain were already fighting the British. Jefferson wanted Russia in the anti-British coalition.

Thus emerged a plan to send Karzhavin to St. Petersburg with a message from the American Congress. The offer of this mission was a great honour, proof of the American revolutionary leaders' confidence in

the Russian visitor. But Fyodor dared not accept. What reception would await him in Russia—the son of a Russian merchant returning to his homeland as a foreign ambassador, and, more, as ambassador of a country that had rebelled against the rule of a monarchy?

And so Karzhavin chose to return to Martinique, with its lush slopes and tropical sun. "My knowledge of chemistry and Latin," he recorded, "secures me a position as assistant to Dupart, Chief Royal Pharmacist." He took other jobs, one selling tobacco and another as a ship's steward. In February 1782 he sailed back to the United States. He was



interpreter ahoard the 10-gun American merchantman *Flora*. He sketched in his diary the coastal cliffs of the Lesser Antilles on the horizon: Dominica, Guadeloupe, Montserrat. . . .

An enemy vessel, hoisting the British flag and firing a warning shot, forced *Flora* to strike her colours on the fifth day out. Fyodor Karzhavin was again prisoner of war—this time on Antigua Island, where the British had a POW camp. The British, however, decided they could not keep Karzhavin captive: his country was neutral. He was freed, penniless, on Antigua, from where he had little hope of getting a ship.

Karzhavin's medical knowledge and the few medicines left in his ransacked bag rescued him. Don Antonio Ramon, captain of the Spanish *San Jose*, New York-bound to exchange prisoners, offered him a joh as ship's doctor.

In British-occupied New York for a month, Karzhavin tried to use the pass issued him as a neutral in Antigua to cross to the American side of the Hudson River. But the British in New York were not so amenable as those in Antigua. They would not let him cross, and his pass disappeared in fathomless Admiralty files. Karzhavin had to remain a Spanish ship's doctor, sailing back to the south, to the Antilles, with a stop at Haiti to mend damaged planking and then on to Cuba.

Karzhavin turned down the

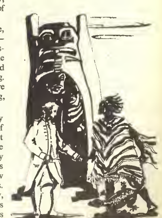
Spanish Army's offer in Haiti of a surgeon's post. In Havana he left the ship, free hut friendless and destitute, unable to return to Russia. He was not discouraged: he treated sick people and sold medicines. At times he also sold alcohol and taught French.

After nearly two years in Havana, he went back to the United States, now independent and at peace, and journeyed from New York to Williamsburg. In Virginia, Karzhavin was again doctor, merchant and interpreter—this time for the French Consulate. He had crossed the ocean in his thirties, dreaming of wealth, fame, adventure, scientific discoveries. Now, turned 40, he had had his fill of adventure and wandering.

Having no money for a fare, he wrote to relatives in Russia—thrifty people who had been displeased at his waywardness. Some time passed before they forwarded the necessary money to Williamsburg. It was late summer in 1788 before he finally returned to St. Petersburg, hy way of Martinique and France.

Just back from revolutionary America and suspected of "ideas of liberty and equality", Karzhavin got a hostile reception at home. He could never publish the full story of his travels: fragments of his experiences are scattered in a few books and notes for translations. His old friend, the architect Bazhenov, gave him a room to himself in his home, which he filled with books and foreign curiosities.

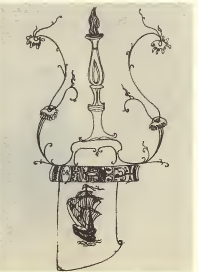
Karzhavin was the unnamed translator of a diary of two English travellers across the Arahian deserts, published in St. Petersburg in 1790. The significant part of the book was not the dry inventory of desert fauna and flora, but the translator's remarkable annotations. They are hardly connected with the English travellers' text at all, and take up nearly one-third of the book. The Englishmen's mention of scorpions gave Karzbavin the chance to describe the habits of scorpions in Havana; their reference to snakes is supplemented by whole treatises on North American, Antilles, Euro-



pean and African snakes.

Still more important were the translator's inclusions of matters dangerous to discuss in czarist Russia. Though Karzhavin wrote of Negro slaves in the Americas and not of serfs in Russia, he was on risky grounds. He told of the Martiniquan slave who concealed snake-bite "thus to die sooner and relieve himself of the unbearable whippings and tyranny of a white man, who had bought him like an animal—without any right—to make a fortune out of his sweat. . . ."

The Russian traveller and scholar, unhonoured and unsung in his native land, died in 1812. Not all his diaries and letters have yet been collated and most remain unpublished. But in the past few years Karzhavin's name has sprung from its undeserved oblivion. No doubt full details of his remarkable experiences, observations and personality will soon be published.



THE PATH TO FAME

by Alexander Svobodin

A girl of about 13 came running out of a bouse and rushed along at top speed to overtake a group of other children on the way to the Alexandrinsky Theatre. The very way she ran spoke of ballet training—right shoulder slightly forward, head up, knees high. That is how a dancer runs across the stage.

A few seconds and—as they would have said in Victorian novels—the vision was gone. The vision was gone, and I was left to enter the famous Leningrad Choreographic School to watch a rehearsal.

"Ready—go!"

She is perfectly proportioned, very slender, with lovely long legs and the delicate face of a young ascetic. She runs to the corner farthest from me, waits for the beat and begins.

"Left side too slow!"

"Thigh!"

"All the left side!"

"Pose!"

"Hold tbe leg steady!"

Tatyana Vecheslova speaks in crisp, clear syllables, each word a spur. She herself takes fire, the years slip away before my eyes, and I recall how famous sbe was, the legends woven about her dancing. Now her Gipsy temperament drives her to action. She jumps up from her chair and runs to Natasha, demonstrates something, stands on one foot, is on her point in an instant, turns to demonstrate the delicate gesture of an outflung arm which somehow Natasha cannot quite get.

The rehearsal continues; next—the duet.

"Ready! Listen to the music!"

"Start again, with the 'cello."

Once more Natasha goes to tbat far corner and begins her pirouettes, moving in a diagonal line towards us. Faster. Firmer. I can see that she is caught up absolutely in music and movement. Her eyes are narrowed, intent. But Vecheslova spurs her on to further perfection.

"Bolder!"

"Stronger!"

"Fly up to the sky!"

An instructor's commands are revealing; they express his artistic feeling, his attitude to the dancers, to the dance, to ballet, to art, to life. They show wbat he puts first—training of the muscles or training of the spirit, and bow tbe two merge.

The rehearsal continues.

"Natasba, don't walk!"

That means avoid the prosaic: float, dance, make your step a reminder of one dance and the anticipation of another. The ballerina dances even when she is not dancing.

Natasha stops by the wall, breathing fast.

"Good girl! Now the next. Fouetté!"

Once more that series of pirouettes that enthrals audiences in "Swan Lake". These are the famous thirty-two fouettés which will surely live for centuries, like Pushkin's poems.

But somehow, Natasha can't seem to manage it. She falters somewhere on the tenth or fifteenth. Again, and again no good. Once more—back again. Another try—another failure. She is flushed, on the point of tears. Vecheslova demonstrates once, twice. No good.

"You can't get it because your slippers are damp and soft," she tells Natasha, and while the girl is changing them Vecheslova whispers to me, "She's done as many as forty fouettés at rehearsals! But she isn't fully in control of her body yet, not enough to force herself to do what seems impossible. She comes to me and I can see in her eyes she's thinking: 'I shan't manage it'. And that means she won't. She's very talented, very supple, but she's not yet master of herself."

The rehearsal continues.

"Don't wobble, stand!"

"Foot well up!"

"Keep up the mood, the mood, all the time. There'll be the farewell now!"

Siegfried—Yura Solovyov, a young dancer recognized, incidentally, as the world's best dancer in 1962—and Odette, Natasha, begin the dance and pose in a tender farewell. She bends towards him, and Vecheslova calls, "Pull your stomach in!" Natasha is so slender, she doesn't seem to have one. She goes to change her slippers again while Yura does his solo—leaps of a wonderful lightness. Now Natasha is back and without a moment's rest ("Better for her to do without," says Vecheslova) resumes the variations. This time her fouettés are a success. Exciting music and an excited girl who has brought it off. One, two, three—the whole thirty-two. Again and again, a real miracle! I am tired with the strain, the excitement of watching. But Vecheslova cries, "Higher! Higher! Again! Again! Again!"

Natasha is on fire. Her turns are like waves pressing me to the mirror behind me.

Now comes another scene. The wizard wants to kill the swan-maiden, and fights the prince for her. Her waist is in his strong bands, he twirls her, faster and faster. Natasha's head is flung back, her arms and legs fly. Her face is all sorrow and despair. She comes to the end of her strength. The wizard flings her to the floor and she dies a yard away from me. I suffer in her death. But the prince approaches and restores her to life with his gaze. So she lives again, and I rejoice.

It was only here, at this ballet rehearsal, that I understood for the first time how this art can grip one, master one for a lifetime. Here, in this thoroughly disciplined world, which originated in royal salons, people live "not in freedom but by will power". There is the academic spirit, the established classic form, but when you hear "higher, higher!" and see how that command gives wings, then you see perfected freedom.

The rehearsal is over. Or, more exactly, not a rehearsal, a lesson on the path to fame, the great fame of the Russian ballet.

Tatyana Vecheslova giving some pointers to Leningrad Ballet dancers Natasha Makarova and Yura Solovyov.

LET'S TALK ABOUT SLIMMING

by Alexander Mitta

from Literaturnaya Gazeta

Alexander Mitta is a young film director who also writes humorous stories, one of which we publish below.

Let's talk about slimming. In recent years it has become a widespread obsession. Statistics compiled by insurance companies abroad sbow that fat people die far more often than their more resourceful and thinner fellows.

There is nothing in nature that can be preserved longer than a skeleton, a thought that is of some solace as we see modern women heading rapidly towards such a state. For the desire to prolong one's life is natural in any living creature.

In our disturbing times, perhaps, slimming is the most sensible prescription for survival to a better epoch.

Complete Starvation

The most effective way to slim is by complete starvation. But if this is done indiscriminately and overzealously there may be some undesirable side-effects, for instance death.

Furthermore, as you know just as well as I do, when you consciously

stop eating, you subconsciously begin to think about eating. This interferes with your job, and increases the percentage of mistakes in your work. Consequently, it is only sensible to dull these thoughts from time to time with a morsel of food without, of course, cutting short the general starvation regimen.

Just remember, though, that these morsels must contain the salts, metals and plastics essential to the body. The organism, after all, is a very complex affair, and only a simpleton would imagine that we eat for our own pleasure. No, boys and girls, it's not so simple. We eat to provide work for enzymes, to maintain our thermostat, isometric and parasympathetic systems in the state they sbould be, and ensure the required salt and water, acid and alkali, and electrostatic levels. When you realize what a horde of good-for-nothings are waiting there inside you to burl themselves on every mouthful you consume, it makes you look more kindly upon your external surroundings.

But the main thing is to remember the cbolesterin. What this is precisely, nobody knows. All that is clear is that too much or too little of it is extremely harmful, or perbaps beneficial, to the organism. So in the circumstances, perbaps, the best thing is to build up a reserve until the day when chit-cbat in the sbops or at work enables one to elucidate the matter.

Discreet Starvation

This is a somewhat palliative measure, but entirely in keeping with the spirit of the times. It consists of going hungry three or four times a day for stretches of four bours, and for a longer period—for eight or nine hours—from night to morning.

With this method it is important to know what must not be eaten. For if you simply cut out whatever foods don't happen to come your way there is a great danger of disrupting your salt, metal and alkali levels.

Most of the things you should not eat are the most delicious of the lot.

Or perbaps, on the other hand, you should eat them. Especially if outside your organism there is someone who is willing to foot the bill. You are paying with your health, so that morally you are even.

The Ousting Method

There are times when you may offend your friends or relatives by refusing food. On such occasions the ousting principle comes in useful.

The principle is this: each mouthful of food ousts its predecessor. A glass of vodka, for example, is ousted by a mouthful of the salt herring or salami that goes after it. Salami, too, may be ousted by a swig of beer. Alkali mineral water may oust a tasty bit of fresh salmon. Mineral water and beer are all right in their way, but should be limited. Because finally you bave to oust all that with another glass of vodka.

After the second glass the ousting may be carried on in larger doses. But bear in mind tbat if you over-do this slimming business it can be downright harmful. So when a roast goose or leg of lamb turns up on the table just tuck in and enjoy yourself . . .

When preparing to slim, you can be confident of the future, for you know that at any convenient moment the lost pounds can be regained.

Now what I really think is this: To look at a tasty bit of food and think of how much harm it will do you if you eat it is a false idea—as you'll realize as soon as you see someone's hand reaching out for it.

MUST WE CUT THE BIRTHRATE?

Population Explosion: Facts and Figures

By Igor BESTUZHEV-LADA, Chairman, Social Forecast Research Committee, Soviet Sociological Association, and Oleg PISARZHEVSKY, in the book, *The Shape of Things to Come*

The world's population in the two centuries between 1650 and 1850 more than doubled—from 550 million to 1,200 million. It only took one century—1850 to 1950—for the world population to double again—to 2,500 million. Should earth maintain present growth rates and have six to seven thousand million people in 30 odd years, the population density on its land surface (excluding North and South Polar regions) would be over 50 to the square kilometre, equal to that of Western and Central Europe. Man, to find living space, would have to overrun vast fields and forests and, throughout the whole world, live as do people in Western and Central Europe today.

The story in statistics is that the annual world population gain has recently reached nearly two per cent, or over 60 million and the globe's inhabitants double in number in 35 to 40 years. This increase rate, according to the UN, is likely to reach 2.6 per cent in the last quarter of this century, so that doubling would then take only 27 years.

Fastest increases in the past 10 or 15 years have been recorded in Mexico, Venezuela, Colombia, Equador, Taiwan, Hongkong, Singapore and Albania. In some Latin American, Asian and African countries and Oceania the annual increment is already over three per cent. These rapid demographic changes are termed "population explosion".

Population Shifts in the USSR in the Past Half-Century

By Professor Boris URLANIS
in ***Growth of Population in the USSR***

In 50 years the Soviet Union has increased its population by 45 per cent, despite terrible war losses. Comparative percentage increases over the half-century are: Germany, 20; France, 28; Britain, 40; Italy, 41; Japan, 79; United States, 94; India, 104; Brazil, 200.

Some two million Russian soldiers died in World War I, so that the population, assessed on the present-day boundaries of the USSR, was about 163 million just before the 1917 Revolution. Civil war, blockade and the epidemics, crop failures and famine took in their wake millions more lives.

The Soviet population, when Nazi Germany struck in mid-1941, was 199 million. Nazi massacre and devastation slashed the total by more than 20 million. But for World War II, the Soviet population would have reached 212 million toward mid-1945. However, five years after the war it had reached only 180 million, and the pre-war 199 million figure was not restored till 1956. But in the following ten years it soared to 232 million.

War cut the birth-rate heavily, and the effects became more evident when the generation of the grim 1942-45 years reached maturity. Totals of men and women of marrying age fell, and the annual population gain dropped from 1.7 per cent in 1950-60 to 1.1 per cent in 1965. Birth-rate statistics bear the mark of war to this day. The birth-rate will begin rising again in 1970.

If all goes well, the Soviet people will number 273 million toward 1980 and 330 million toward 2000, according to the USSR Central Board of Statistics. With its vast expanses, its incalculable natural wealth and economic, scientific and cultural advances, the Soviet Union does not have to limit its population: the numbers will go on multiplying. But this does not mean that population growth at somewhere near present rates can go on forever. Some day it will have to be limited.

Too Many Mouths to Feed? Or Too Few Hands to Work?

By Academician Stanislav STRUMILIN
from Literaturnaya Gazeta

What if population density does reach 50 per square kilometre by the year 2000? Many nations have greater densities already—by 1965 France had 88 per square kilometre, Britain 222, Japan 264, the Netherlands and Belgium over 300. But none of these nations would change places with African countries of two per square kilometres density.

Rising living standards lower the birth-rate. The USSR's birth-rate is 40 per cent of the pre-revolutionary (1913) figure. Italy's birth-rate has dropped in the past half-century by about 37 per cent, Britain's by 22 per cent, America's by 15 per cent. France's rate has not changed, while in the Federal Republic of Germany there is a slight rise. But the exceptions do not disprove the rule. Further birth-rate decline may confront mankind with the opposite problem: instead of too many mouths to feed we may want more hands.

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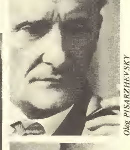
The death-rate has fallen more rapidly than the birth-rate in the Soviet Union*. But in today's world the death-rate can only be reduced so far. The Soviet Union has almost reached the practical limit possible under present conditions in the last decade. The Soviet death-rate in 1960-65 even rose from 71 cases to 73 cases per 10,000 of population. In 1958 the corresponding figure was 75 in Japan, 89 in Finland, 95 in the USA, 112 in France and 117 in Britain. The number of births keeps falling. So whoever predicts a doubling of population in 35 years is in error.

The Rev. Thomas Malthus of England held that population was growing in geometrical progression, and food production in arithmetical progression, that is much slower. Therefore hunger, he claimed, was inevitable. Wars, plagues and other disasters were useful in that they prevented over-population and famine.

*Population is growing all over the planet not so much because birth-rates are rising but because death-rates are falling.

Igor BESTUZHEV-LADA



Oleg PISARZHEVSKY

Boris URLANIS

But the Malthusian "law" fails on two counts. Technological progress can multiply the means of subsistence faster than the number of consumers, and the total world population in these conditions does not rise in geometrical progression at all. The rate of population gain falls, gradually moving to zero.

What is the real explanation? Expectation of life lengthens as the death-rate declines. Health service advances in the Soviet Union raised life expectancy from 32 half a century ago to 70. The life span will continue to lengthen inside and outside the Soviet Union. With more elderly people beyond child-bearing age the percentage of young parents will fall and so will the number of children per thousand of population. Even demographers have not quite grasped the consequences of shifts in population structure. To my way of thinking, these shifts make the danger of over-population unreal.

Optimism Rests on Reason

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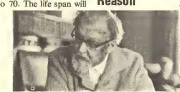
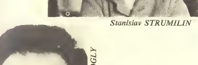
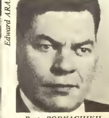




Stanislav STRUMILIN

Edward ARAB-OGLY



Pyotr PODYACHIKH

Gennadi GERASIMOV

By Edward ARAB-OGLY, philosopher
from Literaturnaya Gazeta

Malthus's notorious theories cannot stampede us into pessimism, but the theoretical calculations of Academician Strumilin form a rather problematic basis for optimism.

Rapid population growth is today's incontestable fact, and it will probably persist over the next few decades. Society must choose between improving living standards for a constant population and keeping living standards unchanged for an increasing population. You cannot eat your cake and have it too.

For developing nations, where 1.5 thousand million people refuse to accept hunger and illiteracy, investment of capital presents a vital problem. Governments invest to expand cultivated areas to prevent per capita food production falling, or to augment engineering industries to create as many jobs as they can, even if the industries are primitively equipped, or take steps to lift labour productivity while tolerating unemployment.

No amount or argument as to how many thousand million—50 or 100—the earth will be able to feed toward the end of next century as a result of rapid scientific progress will remove or alleviate this century's population problems.

Genuine optimism rests on the assurance that man will gain control of spontaneous processes, including those involved in population growth, and will be able, as Engels pointed out, to regulate the production of human beings just as it will have by then regulated the production of goods.

The basic distinction between neo-Malthusians and Marxists is not simply the difference between advocacy of birth-control measures and unqualified rejection of these measures. Marxists maintain that demographic measures are not a panacea for economic troubles and social evils. But a scientific population policy, encouraging bigher birth-rates for some areas and reduced rates in others may prove a most effective aid to social progress.

Population and Progress

By Pyotr PODYACHIKH, economist
from *Literaturnaya Gazeta*

Artificial reduction of births, while it may give positive help in adjusting population expansion problems, is a side issue. Birth limitation policies may have practical value when the population has reached certain cultural standards. Only mass education will make possible the moral restriction of the propagation instinct. It would be absurd to recommend a birth-control policy to illiterates.

M. V. Raman of India told the World Demographic Conference in Belgrade that 87 per cent of Indian women were illiterate, and most, during a selective opinion poll, expressed objections to birth control and even revulsion to it. When cultural standards improve, people check population growth.

Japan's lowered birth-rate is explained by some writers as the result of government birth-control policy. But it is due mainly to industrial and cultural advance and wider employment of women. The Government, to quote some Japanese authorities, only provided contraceptives afte, the demand arose.

The Soviet view on population policy in developing countries was included in UN Secretariat Document E/3895, dated November 24, 1964, and circulated to all countries.

Industrial, agricultural and cultural progress, the document points out has helped the Soviet Union to remove the grim legacy of Czarist Russia and repair the devastation caused by two world wars. By 1964 national income had risen to more than 29 times the 1913 figure, and per capita income to 21 times. Urban population had increased, culture was continuing to advance, women shared in social activity.

All this had more than halved the birth-rate. But natural population gain was high enough, and economic growth rate was several times as high as the birth-rate, reaching 7.2 per cent in 1966-67. Solutions to temporary difficulties caused by population growth in developing countries could only be found in economic and cultural progress.

Birth-control policies have yielded no positive results in any country. Problems posed by population expansion could only be relieved by radical social and economic reforms.

Family Planning, Not Government Interference in Family Affairs

By Gennadi GERASIMOV, Novosti Press Agency political observer
from *Literaturnaya Gazeta*

Four per cent of national income is needed to sustain a one per cent annual population growth, demographers have calculated. An eight per cent national income rise—high enougb—will be cancelled out by an average population growth of two per cent—a customary increase. The pointer of the demographic speedometer oscillates around that figure.

Social, economic and cultural progress is unquestionably the most important solution to population problems. Debates begin where the practical problems of applying certain demographic policies are concerned.

The "Japanese phenomenon"—the record drop of more than half in the birth-rate between 1947 and 1961—has become a standing example in demographic works. Industrial advance, the rise in cultural standards and the wider employment of women take effect gradually, are not adequate

explanation of the Japanese birth-rate slump in so few years. Government demographic policy has been the important supplement to these three factors. And this Government policy was more than the provision of contraceptives. Private companies provided most of these. In 1947 the Government legalized manufacture of contraceptives by private firms, and in 1948 lifted the ban on abortions. Abortions were made free and medical information distributed. This comprised the "birth-control" policy in Japan.

Absence of sanctimonious restrictions on frank press discussion of sex questions also contributed substantially to the Japanese result. The Japanese are known for their keen sense of discipline. This helped them to apply more effectively information on sex published in the press.

India's rural backwardness and religious traditions threaten to cancel out the 500 million rupees invested in birth control. All this money may disappear like water in sand. It would be premature, though, to suggest that government policy had failed: it was only launched a few years ago, and not right after the war, as in Japan.

The claim that "birth-control policies have yielded no positive results in any country" is ill-founded. *The U.S. News and World Report,* on January 10, 1966, found that the recent significant drop in the U.S. population growth rate was explained, at least partially, by spread of knowledge about birth control and its adoption by the public. New methods such as the use of preventive pills, have facilitated family planning.

The U.S. has had more marriages and no drastic economic or cultural changes, so birth control has yielded positive results.

I agree with Walter Lippmann, when he cites new types of contraceptives along with jet engines and electronic computers as part of the twentieth-century industrial revolution. The "pill", in a number of variants according to country, is now widely used. Industrial production of such preparations in the Soviet Union has been developed at the All-Union Chemical Pharmacology Institute.

Another radical innovation—the intra-uterine coil of soft plastic—may lead to rapid birth-rate reductions. India plans to distribute 20 million of them in the next five years. Many countries are already producing them. The USSR starts their mass distribution this year.

No pharmaceutical or other innovation is a cure-all. British sociologist A. Nevett rightly says that, even if the most effective of such means, easy to handle and quite safe, is as cheap as aspirin, many people will not buy it for the same reasons that they do not buy aspirin—cultural backwardness and poverty. But this is no adequate excuse for rejecting the dissemination of information on birth control.

In the Soviet Union, the family—and never the Government—decides whether there shall be a child. The Government helps large families and taxes single people, but at the same time abortion and preventive measures are legal.

LEARN TO SEE DREAMS

by Vadim Vadimov
from the magazine
Tekhnika—MOLODEZHI

Just think what a kaleidoscope of sensations, images and thoughts passes through a sleeping person's mind! He watches the most fantastic scenes, lives through past events of his life and takes part in extraordinary adventure.

On awakening, most people feel slightly surprised at their dreams but soon dismiss them from their minds. But sometimes a person is no sooner awake than he rushes to his desk to write down what has come as a revelation in a dream.

On the night of November 9, 1619, René Descartes, French philosopher and mathematician, had a singular experience of which he later made a brief note; he had three dreams which followed one another. He mentions the discovery that he made that night of a "wonderful science". One can only conjecture, knowing Descartes' works following that date, that the brainwave he alludes to was the idea of "universal mathematics" or that of introducing a single system of literal symbols into algebra, or else the discovery of the basic principle of analytical geometry—the possibility of expressing quantities through lines, and lines through algebraic equations.

For a long time Dmitri Mendeleyev was unable to put his idea of the periodic system of chemical elements into table form. After three days of strenuous work he went to bed and fell asleep immediately. History has preserved the story as told by the great man himself: "In my dream I saw a table with the elements arranged in order. On awakening I jotted it down on a piece of paper. I later found only one mistake in it."

The discovery of the benzene ring formula by the German chemist, Friedrich August Kekulé, is no less astounding. His dream began with the generally accepted chemical ideas of his time. He saw long, straight chains of carbon and hydrogen atoms wriggling like snakes, approaching one another now and then.

"But what was this!", writes the chemist. "One of tbe snakes snatched its own tail and the figure began spinning around provokingly before my eyes. I woke up as if struck by lightning and spent the rest of the night analysing the new hypothesis. Let us learn to see dreams! But let us also take care not to make them public before we go over them with the wakened mind."

Here is wbat happened to the French mathematician Jules Henri Poincaré. After trying in vain to integrate a complicated equation he gave it up and went to bed. Toward morning he dreamed he was delivering a lecture on that tricky equation he could not bandle in the evening. Now he integrated it quite easily. Wben the man woke up all he had to do was to put down the solution he had arrived at in his sleep.

The Italian composer Giuseppe Tartini heard the melodies of his compositions in his dreams. The great Russian poet Alexander Pushkin had an inkpot, pen and paper put on his night table. Very often he woke up in the middle of the night to jot down a few lines inspired by a poetical dream.

A curious observation was made by Professor P. N. Sakulin, a literary critic. He noted that any attempt to put off recording subconscious nocturnal thoughts until morning caused nervous tension and kept him awake. As soon as the intruding ideas were committed to paper, if only in a few words, he could sleep quietly.

STONE AGE ART

Cave paintings, the first to be discovered in the Central Caucasian Mountains, were recently found by Kabardino-Balkar University expedition exploring the deep Tyzil Canyon.

Done in gleaming red paint, they depict scenes of deer and aurochs hunting—the aurochs is the almost extinct European bison. The paintings are well preserved despite their age, which experts put at roughly 6,000 years.

Some Stories About Circus Animals

NOT SO DUMB FRIENDS

by Valentin Viren

from the magazine Nauka i Zhizn

The Man and the Lion

Androcles, a Roman slave who fled from a cruel master, is said to have befriended a lion while in hiding in the Libyan desert, removing a thorn from its paw and healing the wound. Man and beast lived together for three years in a cave before Androcles was caught—and sentenced to be torn to pieces by wild beasts.

The slave was confronted by the very lion he had helped, the story goes, and although the lion was ravenous be would not toucb his friend.

That story may not be true, but

The king of the northern forests and the king of the southern deserts both bow to man when kindness rather than the whip is the means of persuasion.

Durov's Corner in Moscow is something of a cross between a zoo and a circus school. The Durov dynasty are famous animal trainers.

in the circus world there are many authenticated instances of great friendship between men and animals.

Boris Eder, a Soviet animal trainer, used to speak with affection and gratitude of a lion of his called Crimea. Once during a performance, Eder's lions somehow got excited and started attacking him. The trainer tried to manoeuvre himself into a position where he could see all the beasts at once, but to his horror one of the lions got behind him. "This is it!" Eder thought. But it was Crimea who had come to his rescue, and went for the other lions; in the ensuing confusion Eder was able to make his escape.

A friendship between another trainer—Turner—and his lion Caesar had a macabre ending.

Between them there was such affection that if anyone made a joking gesture of hitting Turner, Caesar would become so enraged that he would leap at the iron bars of the cage in an attempt to break them and get at the offender.

Once, when like the lion of Androcles Caesar injured his paw rather badly,. Turner cut his claw with a razor blade and disinfected the wound with iodoform, and Caesar sat docile throughout.

Other circus artistes looked with admiration—and sometimes envy—on this fast friendship. But it suddenly came to a terrible conclusion.

At a performance in Tiflis (now Tbilisi, capital of Soviet Georgia), Turner ended his act as usual by putting his head into Caesar's mouth, a finale of many years' standing.

This time, however, Caesar's jaws clamped shut, and Turner's body toppled to the ground. Caesar looked at it, astonished, bent his head and began licking it.

At the crucial moment, it appeared, Caesar had been bitten by a bee or wasp on the lip, and had instinctively closed his mouth.

Manchurian Dog-Master

Dogs are among the most trainahle animals. They can be schooled to do somersaults, ride bicycles, play football, "solve" mathematical prohlems and perform many other entertaining tricks.

About forty years ago a Russian hunter, walking along a dusty road in North China, had a strange encounter with a most unusual caravan. In an old wooden cart drawn hy six large dogs sat an old Chinese cripple; he had no arms, and only one leg. Puppies frisked around him, while on both sides of the cart and behind it were four more dogs laden with various household items.

The old man apparently decided to stop for a rest, and gave a whistle. The cart pulled up, and the dogs scurried in different directions, returning before long with pieces of wood and dry branches to make a fire. "Sancha!" the master called, and up came an old dog with a game leg, which after receiving a whispered instruction set off with a reluctant air towards a nearby lake, carrying a kettle with its teeth.

There seemed to be ahsolute and instant understanding between the old man and his dogs, who served him well.

Before the meal started he assembled his assistants around him in a semi-circle and began to talk to them. Some got praise, others reprimands. They reacted visibly—some wagging their tails happily, others turning their heads away.

The hunter, wbo spoke Chinese, learnt the old man's sad story.

His name was Soong, and he had been a circus artiste, born in Shantung Province in a family that for generations had worked as acrohats, animal trainers and magicians. As a boy he bad gone round the villages with trained monkeys, bears, sheep and dogs, but this life was abruptly cut short when he was run over by a train and crippled.

Soong began to pick up stray dogs, homeless like himself. Patiently, over a long period, he trained them, and not only to do circus tricks hut to help him. The little company would tour the villages giving shows in the streets and squares. Soong, who became known as the "dog-master of Manchuria", would sing plaintive songs while the dogs slowly waltzed or howled in time.

Animal Memories

Not long before the First World War a boy violinist was giving a concert in the Russian town of Orel. As soon as he began a rat pattered on to the stage, and sat there on its hind legs washing its face. Then it settled down as if charmed hy the music, disappearing only when the applause hroke out.

Many in the audience were convinced that this was an intelligent rat that appreciated music, and that the young violinist had fascinated it with his wonderful playing.

The explanation was more prosaic.

A few months earlier Vladimir Durov, a celehrated animal trainer, had performed his act "The Pied Piper of Hamelin" here, and a few of the trained rats had got away. One of these apparently thought the violin was the Pied Piper's pipe, the signal for it to appear on the stage. It had promptly done so, in expectation of the titbit it had always got as a reward from Durov.

From rats back to lions again.

When *Don Quixote* was filmed in the Crimea, Boris Eder and Vasya, a lion from the Leningrad Zoo, were in the cast. After playing its role the lion was shipped back to the Zoo.

A year and a balf later Eder was in Leningrad and decided to look up his old film colleague. Vasya was overjoyed and immediately started going through all the tricks he had learnt for *Don Quixote*—perhaps hoping for a new screen role.

Nero is a lion who was performing quite recently at a circus in Berlin. After the act its trainer, Clara Heliot, was surprised to see a stranger come behind the scenes and go straight to the lions' cage. "Nero!" he called—and Nero came over to the bars and presented his hack for stroking. Miss Heliot was surprised, and perhaps a little piqued, too, for the lion had never shown such affection for her.

But Nero and the stranger were old friends—the man had cared for the lion at the Leipzig Zoo some years earlier.

I heard an amùsing story from Anna Cook, a veteran of the circus. Once she and her hushand, Bagry Cook, a Negro and a famous circus rider, were visiting Vladimir Durov. As they went in, a monkey named Mimus gave a happy exclamation and ran to Bagry Cook, emhracing him and showing great affection. This went on throughout the evening—Mimus had heen hrought from Africa for Durov, and was obviously happy to see a Negro face again after so many years.

Horses also have good memories. In the repertoire of one trainer, B. Manzhelli, was a short act, "The Horse Goes to the Restaurant", featuring two horses—Vilnius in the role of the customer, and Gornostai as a waitress. Wearing a white cap and apron, Gornostai would run into the ring and set a pot of carrots, sugar and bread before Vilnius.

In time the sketch was discontinued—hut something was filed away in Gornostai's hrain. One day years

later a pot of fresh vegetables intended for soup vanished from the circus kitchen. Manzhelli guessed the answer at once—the empty pot was found in Gornostai's stable!

One horse nourished a memory of ill-usage. The performer was rough with it and often beat it. Eventually the horse took its revenge. It seized the man's arm with its teeth and reared, pulling its enemy off the ground and chewing his arm to shreds.

Elephants, of course, never forget either, and there is a similar grim story involving these normally amiable creatures. Old-timers in the circus often recall Jimmy, an elephant in the Charlie Norman troupe, which was touring the USSR. One worker with the troupe was constantly provoking the elephants, offering them bread and snatching it away, or pulling the hair from their sensitive trunks. He went so far that the elephants would start bellowing and stamping their feet as soon as he appeared.

One morning, while watering the horses, the man went closer to the elephants than he meant to.

Jimmy pushed him to one side and settled old scores on behalf of the elephant fraternity by crushing him against the wall.

The briefest of acts with this little musical monkey demands a vast amount of patience and effort.

This good-natured giant only looks clumsy. In fact he makes a pretty good acrobat.

Nikolai Rakhmanov

Winning photographer

Winner of the photographic competition "My Moscow", held in the Soviet capital last year, was Nikolai Rakhmanov, a press photographer. One of the younger photographers who have come to the fore in the last decade, his work has already won acclaim at international exhibitions in India, France and Italy.

"My main theme is Moscow," Rakhmanov says. "And not only because I was born and bred here and have known the pleasures of working in the city. I like it because of the unusual tempo of its life, its interesting architecture and its open-hearted people."

Nikolai Rakhmanov has recently had an album of 80 photographs brought out by the *Moskovsky Rabochy* Publishing House.

Close-up of a beauty.

Ancient and modern in New Arbat Street.

Heading for Moscow.

The old elm.

Breakthrough For Broken Bones

by Yevgeni Borodin

condensed from the newspaper Sovietskaya Rossiya

Wartime. To the small hospital in the town of Kurgan in the south-east Urals came soldiers from the front with mutilated arms and legs. Young Dr. Gavriil Ilizarov, appointed to his first post in 1944, performed all the duties of a G.P. He answered urgent calls, delivered babies and prescribed cough mixtures for colds. But he also found time to think about the soldiers with mutilated limbs, about the children crippled by poliomyelitis and about the cases of bone tuberculosis. They all had to be helped—but how? He was convinced there must be some way. Bones and joints are live tissues and tissues are capable of becoming longer and bigger.

The technique of treating bone fractures is a century old. The patient is put in a plaster cast. This creates several complications. The bones soften, shrink and lose their mobility. Metabolic processes are hindered and the period of healing takes at least six months, if not a year. And most important, plaster casts do not ensure full immobility of the limbs at the fracture point.

Ilizarov himself does not remember how many different methods he turned over in his mind before arriving at a solution: two rings linked with pivots with threaded ends. The threading makes it possible to move the rings towards and away from each other. Captured by wire rings the bone fragments are then fixed in the outer rings and brought closer and closer by the pivots until they meet.

Ilizarov tested his device on scores of animals before he tried it on a volunteer. He well remembers the first time he applied his device to the fractured leg of a patient. Outwardly he was very calm, but his nerves were on edge. The patient felt fine. On the third day Ilizarov allowed him to walk with crutches, lightly treading on the foot of the fractured leg. And the patient walked. On the 16th day the device was removed—the bones had knitted together.

That day was a real breakthrough in the history of medicine, a milestone on the road of orthopaedic surgery.

Ilizarov improved on the original device and went on to tackle more complex problems. For many years orthopaedists have experimented unsuccessfully in cures for shortened arms and legs. Ilizarov reasoned that if his device could bring together fractured bones, it could also stretch them. The danger is that if bone fragments are taken apart, what is known as false joints emerge. Ilizarov brought the fragments together first, allowed them to put on bone tissue, then took them apart millimetre by millimetre. The experiments proved effective.

It was not long before the Kurgan hospital was attracting patients from all parts of the country. A 17-year-old girl who had been bent over like an old woman from childhood could stand upright after Ilizarov's treatment. A man who had walked on crutches for 30 years because his left leg was shorter and bent at the knee could walk on both legs and throw away his crutches . . . a child's deformed leg was stretched more than seven inches, enabling the boy to walk normally. . . .

The number of patients considered incurably deformed and cured by Dr. Ilizarov is too long to list. The visitors' book at the new hospital in Kurgan, where he is practising today is filled with the most heart-warming comments. From all over the country doctors come to study his methods.

The hospital, Kurgan's second, was opened recently. It is a large five-storey building with an experimental laboratory and two departments set aside for Ilizarov. Now he can treat many more patients with the help of his numerous assistants.

Today his methods are being introduced all over the Soviet Union. His devices—he has invented over 50—are now in mass production. The hospital is exploring new methods of treating a wide range of bone diseases and injuries. In particular, Ilizarov is effectively developing methods of bloodless stretching of extremities and designing more devices to unite broken bones.

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FRANK BRANGWYN REMEMBERED

A Bridge in Paris

Frank Brangwyn, the famous British artist, was one of the first men in the West to welcome Soviet Russia. He donated 300 of his works to the USSR in 1925 in token of his admiration for Soviet achievements.

The Soviet people honoured Frank Brangwyn's memory by holding an exhibition of his works in Moscow on the centenary of his birth. *Sputnik* here reproduces several of his etchings.

Barge Haulers

The Gates of Assisi

RUSSIAN CUISINE

from the weekly Nedelya

Try these well tried and tested Russian recipes, taken straight from old books and manuscripts.

KARAVAI

Ingredients
For the pancakes·
2 eggs
3 breakfast cups milk
2 breakfast cups flour
1/2 tablespoon salt
1/2 tablespoon sugar
1/2 tablespoon butter
For the filling:
1¼ lb lights
1¼ lb calves' or pigs' liver
1 medium sized carrot
2 medium sized onions
3 bay leaves
6 8 peppercorns
1 root parsley
2-3 eggs
salt and ground pepper to taste

To prepare dough for pancakes: beat up egg yolks with salt, sugar and melted butter. Then add warm milk, stirring all the time, and gradually, making sure there are no lumps, mix in flour. Now add beaten white of egg, and the pancake mixture is ready. Fry pancakes on botb sides in boiling fat.

To prepare filling: boil lights and liver for 15-20 minutes, first scalding liver with bay leaves, peppercorns, carrot, parsley root, one onion, and salt. Drain and remove parsley root, peppercorns and bay leaves.

Mince lights and liver and fry the other onion, finely cbopped. Mix onion and mince, add finely chopped hard-boiled eggs and mix thoroughly.

Lay the pancakes in a saucepan of suitable size, on each one spreading a layer of the prepared mince (after it has cooled). Bake in a slow oven for one hour.

Serve with sour cream.

KUNDYUBKI OR BEAR'S EARS

Ingredients
For filling:
1¼ lb fresh mushrooms
or
¼ lb dried mushrooms
2 oz onion
4 oz boiled rice
a little butter and sour cream
For dough
Make a stiffish noodle paste, using 1 lb flour, 1 egg, pinch of salt, and 1-2 tablespoon cold water.

Stew mushrooms for 15-20 minutes in saucepan with tigbtly fitting lid. Then chop finely and fry in butter and sour cream with boiled rice.

Roll out dough in a thin layer and cut in squares. Put a little filling on each square and pinch the edges together to form a triangle. Tben pinch together the ends of the long side of the triangle to make a point. This and the other point will give the impression of "ears".

Fry, then transfer to a casserole, add mushroom stock and simmer in the oven for 15 minutes.

HONEY PRYANIKI (Spiced Biscuits with Honey)

2 breakfast cups honey
¾ cup melted butter
½ cup sugar
1 tablespoon ground cinnamon
1 tablespoon cloves
1 tablespoon baking powder
5-6 cups flour
3 eggs

Bring honey to the boil. Beat up softened butter with sugar, add cinnamon, cloves and baking powder and then mix in with honey. Gradually mix in flour and eggs, and beat the whole thing up thoroughly. When it has cooled lay it out on a baking tin and bake for 15 minutes. Then remove it, cut into squares and put it back into the oven to finish cooking.

CHICKEN SURPRISE

For 4 portions:
2¼ lbs chicken
½ lb white bread
2 eggs
5 oz butter
salt

Chop chicken meat finely with a knife, then mix in well half the butter, 1 egg and salt. Divide into 12 schnitzel-shaped rissoles. Cut bread into sbort thin strips after removing crust. Add 2 tablespoons water and pinch of salt to the other egg, and mix thoroughly. Dip each rissole into the egg mixture and then into the chopped bread. Fry on botb sides until golden brown.

Serve three rissoles per portion, with green peas, potatoes, and baked apple, boiled prunes, orange or marinaded fruit.

PANCAKES

For 4 portions.
10 oz flour
2 eggs
1 pint milk
¼ tablespoon sugar
2 tablespoons clarified or ordinary butter for pancake batter
1 tablespoon salt
⅔ oz yeast
1 tablespoon clarified butter for frying
2 tablespoons clarified butter for spreading

Heat half the milk to a temperature of 95-104°F. Add sugar, salt, yeast, and yolks of egg (place separated whites in refrigerator), and mix well to a smooth consistency. Then add 2 tablespoons butter and mix again.

Cover the batter and leave to stand in a warm place for 3-4 hours, during which period it should be stirred several times. Finally add the rest of the milk (also heated) and stir rapidly. Whip the cooled egg whites and fold into batter.

Fry pancakes on both sides in a well-heated heavy frying pan. Spread with butter and pile up on a plate as they are done.

Serve with red or black caviare, any kind of salmon, any kind of smoked fish, herring, sour cream, milk or jam.

Chicken Surprise

Russian Pancakes

INDOMITABLE SPIRIT

In 1743, Mikhail Lomonosov, at that time doing research at St. Petersburg Academy, was arrested and kept in custody for a year—the result of recurrent clashes with dogmatic colleagues who were hindering the development of Russian science.

Lomonosov suffered cold, hunger and illness, but nothing could prevent his continuing his scientific work. When freed, he immediately renewed his attacks on his opponents with two dissertations. Based on his impressions while under detention, they were entitled *Warmth and Cold*, and *The Insensitivity of Physical Particles*.

A Hackneyed Theme

Nowhere else does one find such miracles of eloquence as when a man is talking about his own diseases.

Advice to Composers

An inferior lyric is best set to a lively, tripping melody, so that the listener has no time to stop and think about the words.

If Only. . . .

Five sheep could make mincemeat of one wolf—if only they were not sheep.

STRONGER THAN CONCRETE

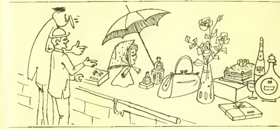
from the magazine Smena

They forced their way to liberty through the concrete floor of a shed on a state farm in the Altai Territory, Western Siberia. Not escaped captives but two field mushrooms, each weighing about two pounds!

RUSSIAN MADE EASY

Lesson Six (УРОК ШЕСТОЙ)

This month's lesson starts with shopping in a department store.



	Razgovor Разговор	Dialogue
Коля:	Zdrástvui, Sásha! Здравствуй, Саша! Hallo, Sasha!	Hallo, Sasha!
	Chtó tI zdés″ délayesh? Что ты здесь делаешь? What you here do?	What are you doing here?
Саша:	Á, Kólya, zdrástvui! А, Коля, здравствуй! Oh, Kolya, hallo!	Oh, hallo, Kolya!
	Sevódnya u LízI dén″ rozhdéniya. Сегодня у Лизы день рождения. Today at Liza day (of) birth.	Today is Liza's birthday.
Коля:	TI shútish! Ты шутишь! You joke!	You are joking!
	U neyó dén″ rozhdéniya zimói. У неё день рождения зимой. At her day (of) birth in winter.	Her birthday is in winter

	A sevódnya pérvoye aprélya. А сегодня первое апреля. But today first (of) April.	And today is the first of April.
Саша:	Da nyét! Oná priglasháyet! Да нет! Она приглашает! Oh, no! She invite!	No, she has invited us there.
	Idyóm vméste. Идём вместе. Go together.	Let's go together.
Коля:	Nu, ládno, idyóm. Ну, ладно, идём. Well, all right, go.	All right, let's go.

Read the following dialogues.

Kolya and Sasha shopping in the department store

1. Саша:	Pozháluısta, pokazhíte zóntik. Пожалуйста, покажите зонтик. Please, show umbrella.	Would you please show us an umbrella.
Prodavets: Продавец: Salesman:	Kakóı vÍ khotíte? Какой вы хотите? Which you like (want)?	Which one would you like?
Саша:	Vot tót sérlı zóntik. Вот тот серый зонтик. There that grey umbrella,	The grey one over there,
	íli tót krásnlı. или тот красный. or that red.	or the red one.
Продавец:	Pozháluısta. Пожалуйста. Please.	Here you are.
Саша:	Spasíbo. Спасибо. Thanks.	Thank you.

	Yá berú sérlı zontik. Я беру серый зонтик. I take grey umbrella.	I'll take the grey umbrella.
Продавец:	Platíte dén"gi. Платите деньги. Pay money.	Pay the money.
2. Коля:	Dáıte, pozháluısta, súmku. Дайте, пожалуйста, сумку. Give, please, handbag.	Show me a handbag, please.
Продавец:	Kakúyu? Какую? Which?	Which one?
Коля.	Pokazhíte séruyu súmku. Покажите серую сумку. Show grey handbag.	The grey one.
Продавец:	Pozháluısta. Пожалуйста. Please.	Here you are.
Коля:	Skól"ko stóit éta súmka? Сколько стоит эта сумка? How much cost this handbag?	How much does it cost?
Продавец:	Shést" rubléı. Шесть рублей. Six roubles.	Six roubles.
Коля:	Khoroshó, vÍpishıte, pozháluısta, çhék. Хорошо, выпишите, пожалуйста, чек. Well, write out, please, bill.	Well, write out the bill, please.
Продавец:	Pozháluısta, poluchíte chék, Пожалуйста, получите чек, Please, receive bill,	Here is your bill,
	platíte dén"gi. платите деньги. pay money.	pay the money.

3.

	Daváı kúpim yeschyó kol″tsó.	
Саша:	Давай купим ещё кольцо.	Let's also buy a ring.
	Let's buy also ring.	
	Zachém kol″tsó?	
Коля:	Зачем кольцо?	Why a ring?
	Why ring?	
	Lúchshe kupít″ dukhí,	
	Лучше купить духи,	Better buy perfume,
	Better buy perfume,	
	tsvetÍ íli tórt.	
	цветы или торт.	flowers or a cake.
	flowers or cake.	
	Úm khoroshó, a dvá lúchshe!	
Саша:	Ум хорошо, а два лучше!	Two heads are better than one.
	Brain good, and two better!	

Grammar hints to a shopper

neutral	Красивое кольцо	Покажите *это красивое кольцо.*
feminine	Серая сумка	Покажите *эту серую сумку.*
plural	Хорошие духи	Покажите *эти хорошие духи.*

Imperative Mood

infinitive	ты (thou)	вы (you)
платить	плати	платите
показать	покажи	покажите
получать	получи	получите
выписать	выпиши	выпишите
покупать	купи	купите
давать	дай	дайте

Complete the following phrases. See the key.

1. Дайте, пожалуйста . . . ________
2. Покажите, пожалуйста . . . ________
3. Дайте, пожалуйста . . . ________
4. Покажите это . . . ________
5. Дайте, пожалуйста . . . ________
6. Саша покупает . . . ________
7. Я беру эту . . . ________

Key

1. Дайте, пожалуйста, сумку. 2. Покажите, пожалуйста, шляпу и платок. 3. Дайте, пожалуйста, цветы и духи. 4. Покажите это кольцо. 5. Дайте, пожалуйста, зонтик. 6. Саша покупает вино и торт. 7. Я беру эту сумку и зонтик.

	Líza, pozdravlyáem s dnyóm rozhdéniya!	
Коля:	Лиза, поздравляем с днём рождения!	Many happy returns, Liza!
	Liza, (we) congratulate with day (of) birth!	
	Spasíbo, no mói dén″ rozhdéniya zimóı.	
Лиза:	Спасибо, но мой день рождения зимой.	Thank you. But my birthday is in winter.
	Thanks, but my day (of) birth in winter.	
	A Sásha govorít, chto sevódnya!	
Коля:	А Саша говорит, что сегодня!	But Sasha says it's today!
	But Sasha say that today!	
	S pérvım aprélya!	
Лиза:	С первым апреля!	April Fool!
	With first (of) April!	

	Ya tepér" vízhu, Я теперь вижу, I now see	I see now
	chto vÍ khoróshiye druz"yá. что вы хорошие друзья. that you good friends.	that you are good friends.
Саша:	Tak éto shútka!? Так это шутка!? So this joke!?	It's a joke then!?
Лиза:	Shútka. Idíte pít" chái Шутка. Идите пить чай Joke. Go drink tea	Yes. Now let's have some tea
	i ést" tórt i konfétÍ. и есть торт и конфеты. and eat cake and sweets.	and eat the cake and sweets.
	Vsyó khoroshó, chto khoroshó konch– áetsya. Всё хорошо, что хорошо кончается. All well that well end.	All is well that ends well.

In the Soviet Union, as in most countries, people are fond of making jokes and fooling their friends on the first of April.

If you want to write a letter to your Russian friend, you can do so by learning the Cyrillic cursive letters.

Russian Penmanship

			name of letters				name of letters
А	а	А..а...	(а)	С	с	С...с...	(эс)
Б	б	Б..б...	(бэ)	Т	т	Т..т...	(тэ)
В	в	В..в...	(вэ)	У	у	У..у...	(у)
Г	г	Г..г...	(гэ)	Ф	ф	Ф..ф...	(эф)
Д	д	Д..д...	(дэ)	Х	х	Х..х...	(ха)
Ё	ё	Ё..ё...	(уо)	Ц	ц	Ц..ц...	(цэ)
Ж	ж	Ж..ж..	(жэ)	Ч	ч	Ч..ч...	(чэ)
З	з	З..з...	(зэ)	Ш	ш	Ш..ш..	(ша)
Й	й	Й..й...	(и)	Щ	щ	Щ..щ..	(ща)
К	к	К..к...	(ка)	Ъ	ъ	Ъ..ъ...	(твёрдый знак)
Л	л	Л..л...	(эл)	Ы	ы	Ы..ы...	(ы)
М	м	М..м...	(эм)	Ь	ь	Ь..ь...	(мягкий знак)
Н	н	Н..н...	(эн)	Э	э	Э..э...	(э)
О	о	О..о...	(о)	Ю	ю	Ю..ю...	(ю)
П	п	П..п...	(пэ)	Я	я	Я...я...	(я)
Р	р	Р..р...	(эр)				

Дайте, пожалуйста, сумку. Покажите шляпу. Я беру зонтик. Мои друзья Саша и Джон пришли ко мне. Сегодня холодная погода. Саша хотел купить кольцо. Часы висят на стене. Рыбак рыбака видит издалека.

Verbs in the Vocabulary are given in the Infinitive, then follow the endings of the 1st and 2nd persons singular and the 3rd person plural.

VOCABULARY (СЛОВАРЬ)

брать, беру, берёшь, берут	*brát", berú, beryósh, berút*	to take
выписать, выпишу, выпишешь, выпишут	*vÍpisat", vÍpishu, vÍpishesh, vÍpishut*	to write out
дать, дам, дашь, дадут	*dát", dám, dásh, dadút*	to give
день, дни	*dén", dní*	day, -s

VOCABULARY *continued*

друг, друзья	*drúg, druz"yá*	friend, -s
духи	*dukhí*	perfume
есть, ем, ешь, едят	*yést", yém, yésh, yedyát*	to eat
ещё	*yeschyó*	also, more
зимой	*zimóı*	in winter
зонтик, зонтики	*zóntik, -i*	umbrella, -s
кольцо, -а	*kol"tsó, kól"tsa*	ring, -s
конфета, -ы	*konféta, -I*	sweets
красивый, -ая, -ое, -ые	*krasívlı, -aya, -oye, -Iye*	beautiful
красный, -ая, -ое, -ые	*krásnIı, -aya, -oye, Iye*	red
ладно	*ládno*	all right
ну	*nú*	well
платить, плачу, платишь, платят	*platít", plachú, plátish, plátyat*	to pay
платок, платки	*platók, platkí*	scarf, -s
подарок, подарки	*podárok, podárki*	present, -s
показать, покажу, покажешь, покажут	*pokazát", pokazhú, pokázhesh, pokázhut*	to show
покупать, покупаю, покупаешь, покупают	*pokupát", pokupáyu, pokupáyesh, pokupáyut*	to buy
получать, получаю, получаешь, получают	*poluchát", polucháyu, polucháyesh, polucháyut*	to receive
приглашать, приглашаю, приглашаешь, приглашают	*priglashát", priglasháyu, priglasháyesh, priglasháyut*	to invite
рождение	*rozhdéniye*	birth
рубль, рубли	*rúbl", rubli*	rouble, -s
сегодня	*sevódnya*	today
серый, -ая, -ое, -ые	*sérIı, -aya, -oye, -Iye*	grey
сумка, -и	*súmka, -i*	handbag, -s
торт, -ы	*tórt, tórtI*	cake, -s
тот, та, то, те	*tot, ta, to, te*	that, those
хороший, -ая, -ое, -ие	*khoróshIı, -aya, -oye, -Iye*	good
хотеть, хочу, хочешь, хотят	*khotét", khochú, khóchesh, khotyát*	to want
цветы	*tsvetÍ*	flowers
чек, -и	*chék, -i*	bill, -s
шесть	*shést"*	six
шутить, шучу, шутишь, шутят	*shutít", shuchú, shútish, shútyat*	to joke
шутка, -и	*shútka, -i*	joke, -s
этот, эта, это, эти	*étot, éta, éto, éti*	this, these

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